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Discussion about Solutions for a humankind Dilemma: Becoming a rich country, a developed country, and at the same time step by step destroying its own next generations - 50 years of observation and recommendations

According to UN criteria, sustainable development includes environmental, energy, and biodiversity sustainability, but did not include human and cultural sustainability. A survey of economic, labor and population development in Japan, Korea and 38 high-income countries in the world today has shown that Vietnam is facing the risk of labor, population, and economic decline in the last 50 years of the 21st century and the risk of self-extinction after 200 years if in the period 2025 - 2050 Vietnam does not have breakthrough changes in economic, social, and population development policies.

> **Prof. Dr. Nguyen Thien Nhan 15th National Assembly Delegate** 11/30/2024

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sustainable population. II. Japan as a Case Study: Following 33 years of remarkable economic growth, Japan experienced 28 years of stagnation and now faces a 61% population decline risk by 2100. III. South Korea as a Case Study: After 43 years of rapid economic growth, South Korea encountered five years of stagnation and faces a similar risk of a 61% population decline by 2100. IV. China's Future Population Challenges: Upon achieving high-income status (2021–2025), China's population of 1.412 billion in 2021 is projected to drop to 525 million by 2100-a 63% reduction. V. Labor and Population Challenges in High-Income Countries: Unsustainable labor and population development over the past 50 years (1970–2023) and population policy models. VI. Vietnam's Population Policy (1961–2023): The country faces risks of unsustainable human development from 2025

to 2045, coupled with labor force, population, and economic decline in the latter half of the 21st century, potentially leading to self-extinction after 200 years.

VII. Recommendations for a Comprehensive System of Solutions to Ensure Sustainable Population and Social **Development as Vietnam Transits to a High-Income Country**



REPLACEMENT TOTAL FERTILITY RATE (RTFR): THE FERTILITY THRESHOLD REQUIRED TO MAINTAIN A STABLE LABOR FORCE AND SUSTAINABLE POPULATION

TOTAL FERTILITY RATE (TFR)

The average number of children a woman gives birth to during her lifetime.



ASSUMPTION

To understand the role of women's childbearing in national development and survival, consider these simplified assumptions:

- Equal numbers of boys and girls survive to adulthood (50% male, 50% female)
- All boys and girls marry upon reaching adulthood.

SCENARIO 1:

If a couple has **2 children**, those children will replace the parents in the labor force once the parents reach retirement age. Similarly, when the parents pass away, the two children will replace them as citizens. This ensures that for each person exiting the workforce, one individual enters, maintaining stability in the labor force and population.

SCENARIO 2:

If a family has **3 children**, on average, when the father or mother reaches retirement age, there will be 1.5 children to replace him or her, and when the father or mother dies, there will be 1.5 children to replace him or her. This family will increase the country's labor force and population (2 parents retire and have 3 children to replace them, 2 parents die and have 3 children to replace them).

SCENARIO 3:

If a family has only **1 child**, then on average, when the father or mother retires, there will be only 0.5 workers to replace him or her, and when the father or mother dies, there will be only 0.5 children to replace him or her. This family will reduce the country's labor force and population, because 2 workers will be replaced just by one when they retire, and when 2 citizens (father, mother) die, and there will be only 1 citizen to replace them.

REPLACEMENT TOTAL FERTILITY RATE (RTFR): THE FERTILITY THRESHOLD REQUIRED TO MAINTAIN A STABLE LABOR FORCE AND SUSTAINABLE POPULATION

Therefore, a TOTAL FERTILITY RATE (TFR) of 2 is the threshold required to sustain the labor force and population and is called REPLACEMENT TOTAL FERTILITY RATE (RTFR)

When the TFR **remains > 2** for an extended period, both labor and population will grow.

When the TFR **stays** < 2 for an extended period, both the labor force and population will decline (the decrease would be slower when life expectancy increases).

WHY RTFR = 2,1?

Due to the fact that not all children born live to adulthood and get married, because some die due to illness or accidents, natural disasters, if 100 couples give birth to 200 children, then when they reach working age and get married, there will only be, for example, 190 children. Thus, there will be only 190 new workers (children) to replace 200 retired workers (parents), only 190 young citizens to replace 200 citizens who die in old age.

To ensure that 200 parents leave behind 200 children of working and marital age, they must have more than 200 children, for example, 210 children. Assuming that 10 children do not survive to working and marital age, there will still be 200 children who will replace their parents in the labor force and as citizens will eventually marry. In other words, to maintain a stable labor force and population, 100 couples must have 210 children, or 100 women must give birth to 210 children. This means the REPLACEMENT TOTAL FERTILITY RATE must be 210 children per 100 women, or 2.1 children per woman. The mortality rate of children before reaching adulthood and marriage depends on the mother's health, nutrition for both the mother and child, living conditions, and child healthcare. These factors vary between countries, which is why the REPLACEMENT TOTAL FERTILITY RATE differs from country to country. However, in practice, when analyzing population statistics across countries today, a TFR of 2.1 is often considered the standard **REPLACEMENT TOTAL FERTILITY RATE.**

How Japan looks like after 47 years (1977–2023) being a high-income country













- 123 million people (2024)
- Ranked 12th in the world
- 93.5% of the population lives in urban areas.
- 4.100 billion USD (2024),
- Ranked 4th in the world.
- GDP per capita = 33.800 USD (2023), 44.200 USD (1995)
- Grade: 6,1
- The second lowest among developed countries, compared to the OECD average of 6.7.

In 1999, the Japanese Ministry of Health and Welfare predicted that if the birth rate and immigration policy remain as they are today, the population in 3000 would be 500 people.



FIGURE 2.1: TRENDS IN TOTAL FERTILITY RATE AND TRENDS IN GDP/CAPITA IN JAPAN (1950 - 2023)

- Average GDP/capita growth for 33 years 1962-1995 was 13.69%/year
- Economic stagnation for 28 years 1996-2023





FIGURE 2.2: TRENDS IN TOTAL FERTILITY RATE, LABOR AND POPULATION **OF JAPAN (1970 - 2023)**

- In **1974**, TFR was < 2.1.
- In 1994, labor reached its maximum value.
- From **1995 2023**, labor decreased.
- In **2010**, population reached its maximum value.
- From 2011 2023: Population decreased.

In 2012, the National Institute of Population and Social Security Research projected that the population in 2100 would be **50** million, and in 3000, it would be **62** people.



FIGURE 2.3: JAPANESE POPULATION PYRAMID OF 2000 YEARS (1,000 - 3,000)

If a country's population decreases by 60% or more compared to its peak population, it is considered to be facing the risk of self-extinction.

From FIGURE 2.3, we can see that by 2100, Japan's population will be around 50 million, representing a 61% decline from its peak population of 128 million in 2010. Japan is facing the risk of self-extinction after 90 years since its population reached its peak.

Between 2018 and 2020, the government allocated an average of \$20 billion annually to promote marriage and childbirth. The goal was to raise the TOTAL FERTILITY RATE (TFR) to 1.8. However, the program was unsuccessful: the TFR was 1.43 in 2017 and decreased to 1.33 in2020.





Article by Professor Nguyen Thien Nhan published in Japan's World Economic Overview Magazine, July and August 2024



キーワード:低い合計特殊出生率、低い合計特殊出生率の因果関係モデル(社会的原因、経済的原因、政策 約5因、社会的な結果、経済的な結果、政策的な結果)、合計特殊出生率の浮橋モデル、自滅化機の防止

虹の高所得国となった。わずか 18 年後の 1995 年までに、日本の一人当たり GDP は 4 万 4200 ドルにまで増加した。これは同年の高所得国の 基準である 9385 ドルの 1.7 格に相当した。以 発日本は超高所得国としての地位を維持してき た。1985年のアメリカの一人当たり GDP は1 万8200ドルで、日本の1万1800ドルの1.5倍 だった(個工を参照)。しかし、わずか十年後、 状況は逆転し、日本の一人当たり GDP は4万 4200 ドルに上り、アメリカ(2万 8700 ドル) 年に世界銀行の発表による一人当たり GDP 分の1.5倍に達した。第二次世界大戦後の日本の

SOUTH KOREA AS A CASE STUDY: AFTER 43 YEARS OF RAPID ECONOMIC GROWTH, SOUTH KOREA ENCOUNTERED FIVE YEARS OF STAGNATION AND FACES A SIMILAR RISK OF A 61% POPULATION DECLINE BY 2100.

How Korea looks like after 28 years (1996–2023) being a high-incomecountry





score

- 51.7 million people (2024)
- Ranked 29th in the world.
- 81.4% of the population lives in urban areas
- 33,121 USD (2023)
- Equivalent to Japan's USD 33,440 (2018).
- Grade: 5.8
- Lowest among developed countries (OECD average is 6.7).



Life satisfaction

would be **20 million** by 2100 and could drop to **zero** by 2750.

• GDP per capita growth rate: An average of 9.71% per year over 43 years, from 1975 to 2018 (nominal GDP, not adjusted for inflation), as shown in Figure 2.4.

• In 2014, the National Assembly's Research Agency predicted that the population

SOUTH KOREA AS A CASE STUDY: AFTER 43 YEARS OF RAPID ECONOMIC GROWTH, SOUTH KOREA ENCOUNTERED FIVE YEARS OF STAGNATION AND FACES A SIMILAR RISK OF A 61% **POPULATION DECLINE BY 2100.**



FIGURE 2.4: TRENDS IN TOTAL FERTILITY RATE ANDTRENDS IN GDP/CAPITA OF KOREA (1960 - 2023)

- Average GDP/capita growth for 43 years 1975-2018 was 9.71%/year
- Economic stagnation for 5 years **2019**-2023

SOUTH KOREA AS A CASE STUDY: AFTER 43 YEARS OF RAPID ECONOMIC GROWTH, SOUTH KOREA ENCOUNTERED FIVE YEARS OF STAGNATION AND FACES A SIMILAR RISK OF A 61% **POPULATION DECLINE BY 2100.**



FIGURE 2.5: TRENDS IN TOTAL FERTILITY RATE, LABOR AND **POPULATION OF KOREA (1970 - 2023)**

• In **1984**, TFR was < 2.1.

• In 2017, labor reached its maximum value.

• From 2018 - 2023, labor decreased.

• In **2010**, population reached its maximum value.

• From 2011 - 2023: Population decreased.

SOUTH KOREA AS A CASE STUDY: AFTER 43 YEARS OF RAPID ECONOMIC GROWTH, SOUTH KOREA ENCOUNTERED FIVE YEARS OF STAGNATION AND FACES A SIMILAR RISK OF A 61% POPULATION DECLINE BY 2100.



FIGURE 2.6: KOREA POPULATION PYRAMID 1000 YEARS (1,800 - 2,800)

From FIGURE 2.6, we can see that by 2100, South Korea's population will be around 20 million, which is a loss of over 61% compared to its peak population of 51.8 million in 2020. South Korea faces the risk of demographic collapse 80 years after its population reached its peak.

From 2006 to 2022, the government spent USD 200 billion to encourage marriage and childbirth with **the goal of achieving a TOTAL FERTILITY RATE (TFR) of 1.6 in 2020.** However, the program failed: the TFR in 2006 was 1.13, and in 2020, it was 0.84 (half of the target of 1.6). In 2023, the TFR was 0.72, the lowest in the world.



SOUTH KOREA AS A CASE STUDY: AFTER 43 YEARS OF RAPID ECONOMIC GROWTH, SOUTH **KOREA ENCOUNTERED FIVE YEARS OF STAGNATION AND FACES A SIMILAR RISK OF A 61% POPULATION DECLINE BY 2100.**



President Yoo Suk-Yeol

19.6.2024

"The National Emergency of demographics" with "the most fundamental and most dangerous- demographic crisis caused by low birth rate"



Minister of Justice Han Dong-hoon

7.2023

"Without immigration, South Korea has no future."

CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOME STATUS (2021 - 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100 - A 63% REDUCTION



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021-2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

Concerned about the risk of population growth exceeding the economy's capacity to ensure an increasingly better quality of life for its citizens, China implemented the one-child policy in 1980. At that time, China's TOTAL FERTILITY RATE (TFR) was **2.7**, and the population was 981 million, as shown in FIGURE 2.7.



FIGURE 2.7: TRENDS IN CHINA'S TOTAL FERTILITY RATE AND POPULATION 1960 - 2023



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021 – 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

1980

One-child policy. TFR = 2,7

1991	1995	2015
TFR = 1,93	TFR = 1,58	TFR = 1,65

- areas.
- 1991 to 1.58 in 1995 (FIGURE 2.7).
- average of 1.65 (FIGURE 2.7).

• The one-child policy was not uniformly applied across all regions in China. Exceptions were made for certain areas and ethnic groups, and the policy was primarily enforced in urban

• After 12 years of implementation, the TOTAL FERTILITY RATE (TFR) dropped below the replacement level for the first time in 1991, with a TFR of 1.93, as shown in FIGURE 2.7. When the one-child policy was introduced, no official documents from the Party or Government specified when the policy would end.

• 5 years later, the TFR continued to decline rapidly, from 1.93 in

• Over the next 20 years, from 1996 to 2015, until the end of the one-child policy, the TFR remained relatively stable at an



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021 – 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

After 36 years of implementing the one-child policy (1980 - 2015), China faces 4 significant challenges:

An increasing number of retirees are forced to return to work. The lack of a sufficient labor force poses risks of slower economic growth, and in the long term, economic stagnation.

Labor shortages

There is a surplus of 32 million men compared to women.

Gender

birth

imbalance at

With fewer children being born, the number of young workers is declining, while elderly population the continues to grow. This results in reduced income for fund pension the and increased expenditures. The **Chinese Academy of Social** Sciences has predicted that by 2035 (just 11 years from now), the pension fund will become insolvent.

Strain on the pension system **Rapid population** decline

Rapid population decline (by 2100, the population is forecast to decrease by 887 million compared to 2021, averaging a loss of 111 million people every 10 years) will leave social infrastructure, such as housing, schools, and hospitals built for millions, hundreds of underutilized – a massive waste of national resources (as currently happening in İS Japan).

CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021-2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION **BY 2100–A 63% REDUCTION**



FIGURE 2.8: TRENDS IN CHINA'S TOTAL FERTILITY RATE ANDGDP/CAPITA 1970 - 2024 (GDP AT CURRENT PRICES), RTFR: REPLACEMENT TOTAL FERTILITY RATE 2.1



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021-2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

- (FIGURE 2.7).

2016

Two-child policy. TFR = 1,77

2017	2018	2019
TFR= 1,81	TFR = 1,55	TFR = 1,5

• Scientifically, if the one-child policy were strictly enforced, the TOTAL FERTILITY RATE (TFR) would be 1 (each woman, on average, would give birth to only one child).

• However, by 2015, although the TFR was 1.67, significantly higher than 1 (FIGURE 2.7), China decided to end the one-child policy due to the ongoing consequences and future instability. From 2016 to 2020, China implemented the two-child policy per family

• After 2 years of the two-child policy, the TFR showed a slight increase, rising from 1.67 in 2015 to 1.77 in 2016 and 1.81 in 2017. However, in 2018, the TFR dropped sharply to 1.55 (a decrease of 0.26 within a year), and it declined further to 1.5 in 2019 (FIGURE 2.7).



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021-2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

2021 **Three-child policy.** TFR = 1,16 2022 2023 TFR = 1,0TFR = 1,08

• In response to the situation, China abolished the two-child policy in 2021 and introduced a three-child policy, along with several measures to support families with children.

- However, in the first 4 years of the three-child policy, the TOTAL FERTILITY RATE (TFR) continued to decline, dropping from 1.28 in 2020 to 1.16 in 2021. By 2022, the TFR fell further to 1.08, and by 2023, it reached 1.0 (FIGURE 2.7).
- Over the 6 years of implementing the two- and three-child policies (2018–2023), the TFR decreased from 1.81 in 2017 to 1.0 in 2023. This means that, as of 2023, young families in China, on average, have only one childconsistent with the one-child policy. The TFR decline of 0.81 over 6 years, or 0.135 per year, is the sharpest drop since the TFR fell below 2.1 in 1991 (FIGURE 2.7).
- This serves as a warning: Even though the three-child policy was introduced in 2021, raising the TFR from 1.0 to 2.1 after 2023 will be extremely challenging. This is due to various factors that discourage couples from having two or three children, beyond government restrictions.



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021– 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

In an online survey conducted in 2021 by China's state-run media company Xinhua 29.000/31.00 participants (93,55%) respondents were asked "Are you willing to support the new three-child policy?" chose the response "I never care about it"

CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021 – 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION



- 1.409 billion (2023)
- Ranked #2 in the world
- United Kingdom (67.8 million), totaling 1.411 billion.
- **GDP:** 17.890 trillion USD (2023), #2 globally
- Purchasing Power Parity (PPP): 31.353 trillion USD, #1 globally
- GDP per capita: 12.621 USD (2023), reaching 91% of the World Bank's high-income threshold USD 13,846 in 2023).
- GDP per capita growth rate: An average of 11.17% per year over 29 years (1995–2024), based on nominal GDP, not adjusted for inflation (FIGURE 2.8).

China implemented the one-child policy for 36 years (1980–2015), reducing the TOTAL FERTILITY RATE (TFR) from 2.7 to 1.67. From 2016 to 2020, it adopted the two-child policy, followed by the three-child policy starting in 2021, and later removed all restrictions on the number of children. Despite these changes, the TFR dropped from 1.67 in 2015 to 1.0 in **2023**, placing China among the four countries and territory with the lowest fertility rates globally (South Korea: 0.72, Singapore: 0.97, Taiwan: 0.87 in 2023).





• This is equivalent to the combined population of 27 EU countries (437 million), South America (423 million), the United States (340 million), Russia (143 million), and the



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021 – 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION





By 2100, China's population will be 525 million, equivalent to 37% of its peak population of 1.412 billion in 2021 (a decrease of 887 million people, or 63% compared to 2021). This means that between 2021 and 2100, China's population will decrease by an average of 111 million every 10 years.

A rough projection of China's population up to the year 3000, based on three demographic parameter scenarios in TABLE 2.1, results in TABLE 2.2 and China's 2,000-year population pyramid, as shown in FIGURE 2.9.



CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021–2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100–A 63% REDUCTION

5		2023	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000 YEAR
1.	Total fertility rate											
•	Basic scenario	1,0	1,1	1,125	1,15	1,175	1,2	1,233	1,266	1,3	1,35	1,4
•	Optimistic scenario	1,0	1,5	1,575	1,65	1,725	1,8	1,866	1,932	2,0	2,0	2,0
•	Very optimistic scenario	1,0	1,75	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
2. P pop	roportion of women in the ulation (%)	48,9	48,98	49,1	49,2	49,3	<mark>49,4</mark>	49,5	<mark>49,64</mark>	<mark>49</mark> ,75	49,86	49,97
3. A exp	verage female life ectancy	81,1	82,66	84,64	86,72	88,75	90,78	92,81	94,84	96,87	98,9	100
4. C pop	crude death rate/1000 ulation	7	17,815	16	15	14	13,5	13,5	13	12	11	11
5. N pop	let immigration rate/1000 ulation	-0,263	-0,29	-0,25	-0,22	-0,21	-0,2	-0,18	-0,16	-0,14	-0,12	-0,1

TABLE 2.1: ASSUMED PARAMETERS FOR THE CRUDE-PROJECTED POPULATION OF CHINA TO THE YEAR 3000



Year	2023	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
Population according to basic scenario (million people)	1409	758	260	103	45	21	10	5	3	2	1
Population according to optimistic scenario (million people)	1409	832	367	191	113	74	51	37	28	25	22
Population according to very optimistic scenario (million people)	1409	882	473	309	218	162	121	91	72	63	56

TABLE 2.2: CRUDE PROJECTION OF CHINA'S POPULATION TO THE YEAR 3000 FOR THREE TOTAL **FERTILITY RATE OPTIONS, TABLE 2.1**

CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021 – 2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION



FIGURE 2.9: CHINA POPULATION PYRAMID 2000 YEARS (CRUDE PROJECTION 2100 - 3000)





CHINA'S FUTURE POPULATION CHALLENGES: UPON ACHIEVING HIGH-INCOMESTATUS (2021-2025), CHINA'S POPULATION OF 1.412 BILLION IN 2021 IS PROJECTED TO DROP TO 525 MILLION BY 2100-A 63% REDUCTION

If we consider China to be at risk of self-extinction when its population decreases by 60% from its peak (to 565 million), the following **scenarios** apply:



BASELINE SCENARIO

With economic, social, andpopulation policies similar to those from 2015-2023, China would face the risk of selfextinction around 2140, approximately 116 years from now.



OPTIMISTIC SCENARIO

The risk of self-extinction would occur around 2158, approximately 135 years from now.





HIGHLY OPTIMISTIC SCENARIO

The risk of self-extinction would occur around 2178, approximately 154 years from now (FIGURE 2.9).



UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS IN HIGH-INCOME COUNTRIES

V.1. Unsustainable Labor and Population Development in High-Income Countries over the past 50 years (1970–2023)

As of December 2023, there are **42 high-income countries worldwide** with populations exceeding 1 million people (excluding small nations, primarily islands, archipelagos, and special territories with populations below 1 million). From an analysis of the TOTAL FERTILITY RATE (TFR) in these 42 countries, the following observations are made:

The combined population of the 42 high-income countries in 2023 is 1,366.8 million. Of these, 38 countries with a TFR below 2.0 have a total population of 1,308.9 million, accounting for nearly 96%. The combined population of the 4 countries with a TFR above 2.0 is 63.5 million, representing only 4%.

12 Data from the TFR of these 38 countries, along with China, is shown in FIGURE 2.10.



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The average time that the TFR of these 38 high-income countries has remained below 2.1 is 40 years, with an average TFR of 1.47, marked as Point G in FIGURE 2.10.

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS



FIGURE 2.10: Correlation Between TOTAL FERTILITY RATE (TFR) in High-Income Countries in 2023 and the Number of Years Their TFR Has Been Below 2.1.

Number of years TFR < 2.0

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970-2023) AND POPULATION POLICY MODELS

Six countries with the shortest periods of TOTAL FERTILITY RATE (TFR) below 2.1 (9 to 25 years) have some of the highest TFRs.

These countries are Uruguay,the United States, New Zealand, Ireland, Costa Rica, and Chile, with TFRs ranging from 1.7 to 1.9, averaging 1.69. The three countries with the lowest TFRs (below 1.1) are South Korea, Singapore, and China (a high middle-income country), with an average TFR of 0.9. All three have had TFRs below 2.1 for some of the longest durations (30 to 55 years).

From FIGURE 2.10, we can observe the following:



Among 30 high-income countries where TFR has remained below 2.1 for 30 to 55 years, 28 are in Europe and Canada. The only exceptions are Japan and Taiwan, which are in Asia. The **TFRs** of these 30 countries range between 1.2 and 1.8, with an **average of 1.467.**

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS



FIGURE 5.1: Trends in TOTAL FERTILITY RATE (TFR) and GDP per Capita of the United States (1960 –2023)





FIGURE 5.2: Trends in TOTAL FERTILITY RATE (TFR) and GDP per Capita of Germany (1960-2023)
UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970-2023) AND POPULATION POLICY MODELS



FIGURE 5.3: Trends in TOTAL FERTILITY RATE (TFR) and GDP per Capita of Canada (1960–2023)

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS



FIGURE 5.4: Trends in TOTAL FERTILITY RATE (TFR) and GDP per Capita of Singapore (1960-2023)

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS



FIGURE 5.5: Trends in TOTAL FERTILITY RATE (TFR) and GDP per Capita Worldwide (1960-2023)

V U T

UNSUSTAINABLE LABOR AND POPULATION DEVELOPMENT IN HIGH-INCOME COUNTRIES OVER THE PAST 50 YEARS (1970–2023) AND POPULATION POLICY MODELS



A general pattern emerges: As countries transit from middle-income to high-income status, their TOTAL FERTILITY RATE (TFR) falls below the replacement level before becoming high-income. The wealthier a country becomes, with higher GDP per capita, the lower its TFR, often dropping below 1.9 (FIGURES 5.1, 5.2, 5.3, 5.4).

Among the 42 high-income countries, 38 had a TFR below 2.1 in 2023. The shortest duration with TFR below 2.1 is 9 years, while the longest is 55 years. The average duration for these 38 countries is 40 years, with an average TFR of 1.47.

Four of the 42 high-income countries had a TFR above 2.1 in 2023. However, their TFRs are steadily declining each year. It is projected that Saudi Arabia, Kuwait, and Panama will fall below a TFR of 2.1 by 2030 or earlier. For Israel, with a TFR of 2.89 in 2024, due to its unique social, political, and cultural characteristics, there is currently no basis for predicting when its TFR will drop below 2.1.



A country with a TOTAL FERTILITY RATE (TFR) **below 2.1** for an extended period will inevitably face three major consequences (if there is not enough immigration to offset the labor shortage):



1. Decline in the labor force and economic growth potential

• A shrinking workforce will lead to reduced economic growth, as there will be fewer workers to contribute to production and consumption.

• Without sufficient immigration to replace the lost labor force, GDP will continue to decrease.

A country with a TOTAL FERTILITY RATE (TFR) below 2.1 for an extended period will inevitably face three major consequences (if there is not enough immigration to offset the labor shortage):



2. As the labor force decreases, the population will also begin to shrink



In the case of South Korea, this happened after about 4 years, and for Japan, after 17 years. These countries will face the risk of selfextinction, with South Korea and Japan potentially experiencing this within 80 to 90 years, unless fundamental changes are made to their economic, social, and demographic policies.

China has already experienced 33 years of TFR below 2.1, with a population of 1.409 billion in 2023 and a TFR of 1.0. If no drastic policy changes made, China's population is forecasted to fall to just 525 million by 2100, a 63% reduction from its peareak population of 1.412 billion in 2021. This means that China will face the risk of self-extinction in about 80 years. China will not be able to rely on immigration of 500 to 800 million people to stabilize its workforce and population.



A country with a TOTAL FERTILITY RATE (TFR) below 2.1 for an extended period will inevitably face three major consequences (if there is not enough immigration to offset the labor shortage):



3. National Pension Fund Faces Insolvency, Triggering a Retire Care Crisis.



India is the most populous country in the world, with a population of 1.417 billion in 2023. Its TOTAL FERTILITY RATE (TFR) was 3.35 in 2000, 2.6 in 2010, and dropped below 2.0 in 2021. The TFR is projected to be 1.29 in 2050 and 1.04 in 2100 (approximately 80 years after China).



South Korea has the third-largest pension fund in the world (\$737 billion as of May 2023), but it is projected to become insolvent by 2055, in 32 years.



China's pension fund is projected to become insolvent by 2035, just 12 years from now, when the population aged over 60 will exceed 400 million.

Thus, all high-income countries today (except Israel), as well as the two most populous countries in the world with high-middle income (China) and low-middle income (India), if there is no fundamental change in economic, social, and population policies, are on the same path:

- Before becoming a high-income country, they failed to sufficiently reproduce their own population (with a fertility rate below the replacement level). After becoming high-income countries, they will be unable to restore their fertility rate to the replacement level for decades or even centuries, facing the risk of self-extinction.
- The use of immigrants from Africa to offset the global labor shortage is only a short- term solution because Africa's fertility rate is also expected to fall below the replacement level before 2070. After 2051, the global fertility rate is projected to fall below the replacement level (FIGURE 5.5). By 2070, the world will enter a phase of labor shortages and global population decline, with the fertility rate forecast to be 1.98 in 2070 and 1.84 in 2100 (FIGURE 5.5).

The low TOTAL FERTILITY RATE (TFR) below 2.1, sustained for several decades in most high-income countries and in China, is attributed to several specific causes:

1. High cost of living when having children, especially costs related to housing, education, and healthcare.

2. Excessive working hours at companies.

5. Job insecurity and slow wage growth.

3. Lack of childcare facilities, especially affordable public daycare.

6. Increased educational and professional qualifications among women, leading to their higher demand for employment.

4. Inadequate sharing of household responsibilities and childcare duties by husbands.

The low TOTAL FERTILITY RATE (TFR) below 2.1, sustained for several decades in most high-income countries and in China, is attributed to several specific causes:

7. Accessible contraceptives

8. Government support for child-rearing costs too low

9. The cost of infertility treatment is too high

10. Employment opportunities and career advancement are negatively affected when women give birth, have to stay home to care for young children, and then return to work.

11. Changes of mind set of young people and society about the role of family,the necessity of marriage and having children.

4 ROOT CAUSES

01

The leadership of countries and business owners do not view the reproduction of people and the family as a prerequisite for sustainable national development and the long-term survival of the nation. They do not consider the happiness of the people and the long-term survival of the country as the highest goal of national governance.

When the TOTAL FERTILITY RATE (TFR) is maintained at 2.1 in the long term, the country's labor force is reproduced, and people are adequately replaced (when two parents pass away, they leave behind two children to replace them as labor to society and as citizens). When the TFR is below 2.1 for a prolonged period, the country lacks labor, ultimately destroying its human resources for future development. Immigration may temporarily fill the labor gap, but it is only a short-term solution and will end after 100 years (1970-2070).

4 ROOT CAUSES

02

Currently high-income countries, while prioritizing GDP growth, do not simultaneously pursue the goal of sustainable human development and the development of sustainable families

Under the pressure to seek high profits from business owners and the pressure of political terms from governments and political parties, the conditions for having a happy family with two children are becoming increasingly difficult and are not considered a top priority for the survival of the country. As a result, more and more young people do not see marriage and having children as a necessity for themselves.

03

4 ROOT CAUSES

In order to regenerate labor for the country and ensure a fertility rate (TFR) of >= 2.1, it is necessary to regenerate the family and have an average of two or more children per family. This is an irreplaceable prerequisite for the country and its economy to develop sustainably and for its people to be happy.

> The entire society—government, political parties, business owners and citizens -needs to engage in widespread discussion and reach a unified understanding: Is the long-term existence of the country and nation over 300 years, or even 1,000 years, NECESSARY?

(In 1999, Japan forecasted a population of 500 people in the year 3000. In 2014, South Korea forecasted a population of zero in the year 2750. However, after these projections, there was no further social discussion about the future of the nation.)

4 ROOT CAUSES

03

The entire society—government, political parties, business owners and citizens —needs to engage in widespread discussion and reach a unified understanding: Is the long-term existence of the country and nation over 300 years, or even 1,000 years, NECESSARY?

Only then will the country have the political will, patriotism, and intelligence to change economic, social, and population policies, making marriage and having children—especially two or more children—a desire for every citizen and business owner, the action program of political parties and a mandatory measure of success for every government. Marriage and having children are the choice and right of each citizen, and at the same time, they will determine whether the country will endure or face extinction. A society that views marriage and childbirth merely as a personal matter, unrelated to civic duty, will eventually cease to exist.

4 ROOT CAUSES

04

The marriage and childbirth support programs, which cost tens of billions of USD each year in many countries, with the goal of restoring the TOTAL FERTILITY RATE (TFR) to higher levels (1.6 in South Korea or 1.8 in Japan), or to replacement level, have been unsuccessful.

The underlying reason for this failure is that they do not address the three issues of Imindsets of governments, political parties, business owners, and citizens mentioned above.

Additionally, there are three specific reasons outlined in TABLE 2.3.

	JAPAN	KOREA	CHINA	SINGAPORE	VIETNAM
1. TFR below 2.0 in year	1975(TFR=1.91)	1984(TFR=1.74)	1991(TFR=1.93)	1977(TFR=1.82)	2023(TFR=1.96)
2. Time when TFR below 2.0 until 2024	50 years	41 years	33years	48 years	2 years
3. National program to encourage marriage and childbearing (NPEMC) started in	1990	2006	2021/2023	2001	
4. Time NPEMC began after TFR below 2.0 for how many year	16 years (1975-1990)	23 years (1984-2006)	30 years (1991-2021)	25 years (1977 - 2001)	
5. Full-year support level of the NPEMC compared to GPD	1.49% of GDP				
6. National support level (billion USD)	20 billion USD/year (2018 - 2020)	12.5 billion USD/year (2006 - 2022: 200 billion USD			
7. Support level for 1 child	3.5-5.00 USD/day	4.00-5.00 USD/day		20 USD/day	
8. Program objectives: encouraging marriage and childbearing raising TFR	TFR = 1.8 in 2020	TFR = 1.6 in 2020			
9. Recent Actual TFR	TFR = 1.33 in 2020 TFR = 1.2 in 2023	TFR = 0.84 in 2020 TFR = 0.72 in 2023	TFR = 1.28 in 2020 TFR = 1.16 in 2021 TFR = 1.08 in 2022 TFR = 1.0 in 2023	TFR = 1.1 in 2020 TFR = 1.12 in 2021 TFR = 1.04 in 2022 TFR = 0.97 in 2023	

TABLE 2.3: NATIONAL PROGRAM TO ENCOURAGE MARRIAGE AND CHILDBEARING (NPEMC) UNDER WHICH CONDITION COUNTRIES IMPLEMENTING AND RESULTS

From Table 2.3, we can see that:)

1. Japan, South Korea, and Singapore implemented programs encouraging marriage and childbirth too late, when the TOTAL FERTILITY RATE (TFR) had already dropped too low.

In Japan, this happened 16 years after TFR fell below 2.0, with TFR at that time being 1.54; 23 years in South Korea with TFR at 1.13; and 25 years in Singapore with TFR at 1.41.

By that time, young people approaching marriage age had witnessed their countries going through decades of low birth rates, with families having fewer than two children on average. The society had accepted this as normal.

Along with the ineffectiveness of the government's programs to encourage marriage and childbirth, people gradually no longer considered marriage and having children as important.

(From Table 2.3, we can see that:)

2. The financial support provided by the governments of the three countries (an average of 3.5) - 5.00 USD per day per child in Japan and South Korea, and 20 USD per day in Singapore) is actually too small compared to the expenditure needed to raise and educate children.

> Therefore, sociological surveys about the reasons why couples are reluctant to have children or young people are hesitant to marry consistently show that insufficient financial resources to raise children and sustain family life is the primary reason

> South Korea is the country with the highest cost of raising a child from birth to 18 years old in the world, at 7.79 times the GDP per capita (271,957 USD), followed by China at 6.9 times GDP per capita, and Japan at 4.26 times.

> > Singapore is the most expensive city in the world (in 2023, 2024).

From Table 2.3, we can see that:

3. When the TOTAL FERTILITY RATE (TFR) remains below 2.0 for over 20 years, it leads to a labor shortage, causing economic stagnation (very little growth or gradual decline) and stagnant tax revenue.

This worsens the socio-economic outlook, which in turn makes people of marriageable age reluctant to marry, and those who are married hesitant to have children, further reducing the TFR (the self-sustaining effect of a prolonged low TFR).



FIGURE 2.11: GENERAL MODEL OF CAUSES OF DECREASING TOTAL FERTILITY RATE AND MECHANISM OF SELF-PERSISTING LOW TOTAL FERTILITY RATE BELOW REPLACEMENT RATE FOR 40 YEARS IN KOREA

Lesson 1: There is a need to change the philosophy of national governance-prioritizing the happiness of the people and the long-term survival of the nation over the goal of high GDP growth for many consecutive years. Economic growth should be seen as an important tool.

With the goal of sustaining high economic growth for decades, Japan and South Korea have been very successful:



From 1962 to 1995

Japan's GDP per capita grew at an average annual rate of 13.69% over 33 years. Japan's GDP per capita, compared to the U.S., increased from 20% to 154%, FIGURE 2.12.

South Korea's GDP per capita grew at an average annual rate of 9.71% over 43 years. South Korea's GDP per capita, compared to Japan, increased from 13% to 101%, FIGURE 2.12.



From 1975 to 2018

V.3. THREE LESSONS FOR VIETNAM



Korea: 1975 (617 USD), 1972 (324 USD), 1962 (106 USD)

FIGURE 2.12: GDP/CAPITA OF THE US, JAPAN, AND KOREA 1962 - 2023 AND THE RATIO OF GDP/CAPITA OF JAPAN COMPARED TO THE US, KOREA COMPARED TO JAPAN AND KOREA COMPARED TO THE US

V.3. THREE LESSONS FOR VIETNAM

However, in terms of sustainable development, this remarkable achievement is NOT SUSTAINABLE, and the country is at risk of self-extinction:

From 1996 to 2023

Japan has experienced 28 years of economic stagnation, with GDP per capita in 2023 being only 76.5% of the 1995 level. The ratio of Japan's GDP per capita to the U.S. in 1962 was 20%, in 1995 it was 154%, but by 2030, it is forecasted to return to 20%. Figure 2.12.

The fertility rate has been below the replacement rate for 50 years (1974 - 2023). In 2023, the fertility rate was 1.2, and Japan has forecasted a population of 50 million in 2100, just 10 million in 2200, and only 62 people in 3000. Japan's life satisfaction (happiness) score is the second-lowest among high-income countries.

South Korea has experienced 5 years of economic stagnation, with average GDP per capita during these years being only 98% of the 2018 level. The fertility rate has been below the replacement rate for 40 years (1984 - 2023), with a fertility rate of 0.72 in 2023, the lowest in the world. South Korea forecasts a population of 20 million in 2100, 3 million in 2200, and no people at all by 2750. South Korea's life satisfaction (happiness) score is the lowest among highincome countries.

From 2018 to 2023

Lesson 2: Countries started policies to encourage marriage and childbirth too late.



Japan issued a warning in 1999 about the consequences of the declining birth rate (with the population) shrinking to only 500 people by the year 3000). However, at that time, the government, parliament, and business leaders did not discuss how to prevent the population from decreasing from 120 million to 500 people over the next 1,000 years. It was not until just 24 years later, despite spending 20 billion USD per year from 2018 to 2020, that in 2023, the Japanese Prime Minister declared: the biggest crisis facing the country is the population crisis, and it must be addressed now or it will never be solved. The Chief Cabinet Secretary stated that the next 6 years (2024 - 2030) will be the last opportunity to reverse the declining birth rate trend.



Lesson 2: Countries started policies to encourage marriage and childbirth too late.



South Korea's TOTAL FERTILITY RATE (TFR) fell below the replacement level (1.74) as early as 1984. However, it wasn't until 2006 that the government launched programs to encourage marriage and childbirth, which was 23 years after the TFR fell below the replacement level. Despite spending 200 billion USD from 2006 to 2023, on June 19, 2024, the President of South Korea declared a 'national emergency on demographics,' and in July 2023, the Minister of Justice stated: "Without immigrants, South Korea has no future." The TFR in 2023 is 0.72, the lowest in the world.



Lesson 2: Countries started policies to encourage marriage and childbirth too late.



Singapore has witnessed the TOTAL FERTILITY RATE (TFR) fall below the replacement level since 1977 (TFR) = 1.82), but it wasn't until 2001, after 25 years, that the government began implementing programs to encourage marriage and childbirth. In 2023, the TFR was 0.97, one of the lowest in the world. This means that on average, the three countries mentioned implemented their programs to encourage marriage and childbirth 21 years after the TFR had fallen below the replacement level, and by that time, the average TFR had already reached 1.36 (which is too low).



Lesson 3: The financial support capacity of the government for families to raise and send two children to school until they are 18 is very limited. If business owners do not get involved, there will never be enough financial resources to solve the problem.

In the period from 2018 to 2020, Japan spent 20 billion USD each year to encourage marriage and childbirth, while South Korea spent 12.5 billion USD. This means that each child received 3-5 USD in support per day. This support is too small compared to the costs of raising and educating children. The new Japanese government is considering increasing the amount to 25 billion USD per year, which would add 1 USD per day for each child.



However, business owners do not feel This will not have any effect on increasing the number of children born. responsible for raising wages for In order for couples to have enough workers so that families have enough income to raise two children and send income to have and raise two children, them to school until they are 18, it is not while these children will be the future enough to rely solely on daily workforce for the business owners. government subsidies for each child; They do not raise wages for workers to wages for workers must be increased. meet this requirement.



Lesson 3: The financial support capacity of the government for families to raise and send two children to school until they are 18 is very limited. If business owners do not get involved, there will never be enough financial resources to solve the problem.

Singapore is a country with a GDP per capita of 84,000 USD, more than 2.5 times higher than Japan and South Korea. However, the actual income of a significant portion of the workforce, compared to the cost of living and the need to raise two children, is not very high. Their birth rate has dropped significantly, and in 2023 it was only 0.97.

Recently, when prices increased, the If this support is spread over three Singaporean government decided to months, on average, each person with allocate 1.9 billion Singapore dollars low and middle income in Singapore (equivalent to 1.42 billion USD) from will receive 1.7 USD (for those with average income) to 3.3 USD (for those the 2024 budget to provide living assistance to 2.4 million residents with very low income) per day. The aged 21 and above (accounting for 40%) practical effect of this support to of the population), with support ranging alleviate living difficulties is clearly from 150 to 300 USD per person. very limited.



Surveys of population changes in 38 high-income countries over the past 50 years show three population policy models in these countries to cope with the situation of fertility rates below the replacement level for an extended period.

V.4.1. Population policy models strongly restricting immigrants

- Japan and South Korea are two typical countries that implement this policy.
- Due to the cultural characteristics of both countries, the governments of Japan and South Korea have kept the annual number of immigrants very low. They do not view immigrant labor as the primary human resource to compensate for the labor shortage caused by the prolonged fertility rate below the replacement level. While in OECD countries, the proportion of immigrants (born abroad) to the total population in 2021 was around 10.4%, and in Germany, it was 17%, in Japan, this ratio was only 2.2%, and in South Korea, it was 2.3% in 2019.



Surveys of population changes in 38 high-income countries over the past 50 years show three population policy models in these countries to cope with the situation of fertility rates below the replacement level for an extended period.

V.4.1. Population policy models strongly restricting immigrants

- However, from 1995 until now, South Korea has adjusted its policy and annual immigration quotas, leading to a significant increase in the number of immigrants. In 1997, the number of foreigners in South Korea was 390,000, in 2007 it was 1 million, and in 2023 it was 2.5 million, accounting for 4.8% of the population. In 2023, the South Korean Minister of Justice declared, 'Without immigrants, South Korea has no future.' It can be concluded that South Korea has abandoned its policy of restricting immigration for cultural reasons and shifted to a policy of utilizing immigrants for economic reasons: to make up for the labor shortage in order to maintain economic growth and compensate for the declining population.
- If there is no fundamental change in immigration policy, both Japan and South Korea face the risk of self-extinction: It has been predicted that by 2100, they will lose 61% of their population, and by 2750, South Korea will have no population left, while Japan in 3000 will have only 62 people.

Surveys of population changes in 38 high-income countries over the past 50 years show three population policy models in these countries to cope with the situation of fertility rates below the replacement level for an extended period.

V.4.2. The population policy model leveraging immigration to stabilize the labor force and population when the TOTAL FERTILITY RATE (TFR) is below the replacement level for an extended period

Most high-income countries in Western Europe (UK, France, Spain, Italy, Netherlands, Portugal, Denmark, Finland, Slovenia, Greece, Estonia,...) have adopted this model, and the Federal Republic of Germany (FRG) is a representative example. In 1966, Germany's TOTAL FERTILITY RATE (TFR) was 2.5, in 1970 it was 2.0, and in 1975 it was 1.4. From 1975 to 2010, the TFR remained stable, with little change, averaging 1.375. From 2015 to 2023, the TFR averaged 1.5. Thus, Germany's TFR has been below the replacement level for 54 years (1970-2023). In principle, this means that after 1995, the labor force would decrease, and after 2010, the population would decline. However, Germany is a country with experience in using immigration to compensate for labor shortages. In 2005, **Germany passed the Immigration Law of 2005**, which for the first time committed public resources to support the integration of immigrants, liberalized the labor market for immigrants with vocational training, and limited immigration to skilled workers.

Surveys of population changes in 38 high-income countries over the past 50 years show three population policy models in these countries to cope with the situation of fertility rates below the replacement level for an extended period.

> V.4.2. The population policy model leveraging immigration to stabilize the labor force and population when the TOTAL FERTILITY **RATE (TFR) is below the replacement level for an extended period**

- In 2009, 2012, and 2013, Germany continued to implement small reforms to further liberalize its labor market. In 2023, Germany passed a law for immigrants with vocational training. With these policies in place, the number of immigrants to Germany has been large and continuous. From 2013 to the present, over 1 million people have immigrated to Germany each year on average. In 2019, there were 13.7 million first-generation immigrant citizens (born abroad), making up 17% of the population.
- Thanks to such immigration policies, although the TOTAL FERTILITY RATE (TFR) has been below the replacement level for 54 years, Germany's population has remained stable, and even recently experienced slight growth: the population was 81.7 million in 1995, 82.5 million in 2005, 81.7 million in 2015, and 84.5 million in 2023.

Surveys of population changes in 38 high-income countries over the past 50 years show three population policy models in these countries to cope with the situation of fertility rates below the replacement level for an extended period.

V.4.3. The population policy model leveraging immigration to increase labor and population when the TOTAL FERTILITY RATE (TFR) has been below replacement level for decades

Some high-income countries that have successfully implemented this population policy include: Singapore, Canada, the United States, Ireland, Australia, Switzerland, Belgium, Norway, Luxemburg, New Zealand, and Sweden.





Thus, Singapore has experienced 47 years with a TFR below replacement level (1977 - 2023), yet its population has continued to grow: from 1970 to 1990, the population increased by 1 million (from 2.1 million to 3.05 million); from 1990 to 2000, it grew by 1 million (from 3.05 million to 4 million); from 2000 to 2010, it increased by 1 million (from 4 million to 5.08 million); and from 2010 to 2023, it grew by 1 million (from 5.08 million to 6 million).



- The continuous population growth in Singapore from 1977 to the present is primarily due to the country's immigration policies, which have helped prevent population decline and stabilize the workforce.
- In 2013, the Singapore government released a white paper titled "A Sustainable Population for a **Dynamic Singapore**," which forecasted that the workforce would begin to shrink starting in 2020, and the population in 2030 would be around 6.5 to 6.9 million people. With significant and continuous immigration since the 1980s, the proportion of foreign-born individuals in Singapore's population in 2023 stands at 43%. The decline of the TOTAL FERTILITY RATE (TFR) below the replacement level in Singapore has occurred in three phases:
 - \rightarrow 34 years (1977 2010) of a sharp decline in the TFR from 1.8 to 1.0.
 - > 12 years (2010 2021) of very low, stable TFR, averaging 1.1.
 - In the past two years (2022 2023), the TOTAL FERTILITY RATE (TFR) has decreased to a record low. The TFR in 2022 was 1.0, and in 2023 it dropped further to 0.97.



- Despite Singapore's high GDP per capita, which was 84,734 USD in 2023, and the government's implementation of programs encouraging marriage and childbirth to increase the fertility rate, these programs have not been successful. The TOTAL FERTILITY RATE (TFR) in 2023 is 0.97, the third lowest in the world, after Hong Kong and South Korea.
- Therefore, it is only through selective immigration policies (targeting highly educated individuals) that, despite a continuous decrease in the TFR over the past 47 years, Singapore's population has grown from 3 million in 1990 to 6 million in 2023 (a twofold increase).
V.4. POPULATION POLICY MODELS IN HIGH-INCOME COUNTRIES



Thus, Canada has experienced 52 years of TFR below replacement level (1972 - 2023). During this period, for 10 years (1972 - 1981), the TFR decreased continuously. For 30 years (1982 - 2011), the TFR remained relatively stable, with an average of 1.61. For the last 12 years (2012 - 2023), the TFR continued to decline from 1.63 in 2011 to 1.26 in 2023.

V.4. POPULATION POLICY MODELS IN HIGH-INCOME COUNTRIES

The Case of Canada

- Thus, without immigration, Canada's population would have started to decrease after 1995. However, thanks to an active immigration policy to counteract the consequences of low birth rates and an aging population, Canada's population has continued to grow. Compared to 1991, the population in 2023 increased from 27.3 million to 40.1 million, nearly 1.5 times higher. In 2020, Canada announced its immigration plan for the years 2021, 2022, and 2023, with annual immigration levels of 401,000, 411,000, and 421,000 people. Following this direction, Canada has projected its population (high scenario) to be 44 million in 2031, 49.9 million in 2041, 56 million in 2051, and 63 million in 2061.
- Thus, Canada is a country that has planned to increase its population through immigration, despite having a very low fertility rate for the past 40 years (2020 - 2061). The population is expected to grow from 38 million to 63 million, an increase of 1.6 times. This means that compared to 1991, the population could rise from 27.3 million to 63 million by 2061, which is 2.3 times higher. In contrast, 100 years ago, in 1961, the population was only 18.2 million, showing an increase of nearly 3.5 times. In 2021, there were 8.3 million immigrants (born abroad) in Canada, accounting for more than 22% of the population.



POPULATION POLICY OF VIETNAM FROM 1961 TO 2023, RISKS OF UNSUSTAINABLE HUMAN DEVELOPMENT IN THE PERIOD 2025-2045, RISKS OF DECLINING LABOR, **POPULATION, AND ECONOMY IN THE SECOND HALF OF** THE 21ST CENTURY, AND THE RISK OF SELF-**EXTINCTION AFTER 200 YEARS**





1961 to 1975 Vietnam (North) implemented a policy encouraging each family to have only 1 or 2 children.

After 1975 This policy was applied nationwide

1989

The TOTAL FERTILITY RATE (TFR) was 3.8

1999

The TOTAL FERTILITY RATE (TFR) was 2.33

By 2005

The TOTAL FERTILITY RATE (TFR) had decreased to 2.11

By 2010

The TOTAL FERTILITY RATE (TFR) reached 2.0

Although the TFR in 2010 was below the replacement level, the Vietnam government's population and reproductive health strategy for the 2011-2020 period set targets to further reduce the TFR to 1.9 by 2015 and 1.8 by 2020. Achieving this goal would significantly reduce Vietnam's capacity for sustainable development in terms of labor and population. In 2017, the 21-NQ/TW Resolution on Population Work in the New Situation corrected this mistake.



The government's Population Development Strategy until 2030 (2019) also clearly affirms these objectives. On average, from 2003 to 2022, Vietnam's TOTAL FERTILITY RATE (TFR) was 2.078, close to the replacement rate of 2.1. To date, Vietnam is the only country in the world where the ruling party and government have set the goal of ensuring the Replacement TOTAL FERTILITY RATE for the next 10 years (2020-2030) after the average TFR over the past decade approximated the replacement level.

However, the implementation of the objectives set by Resolution 21-NQ/TW (2017) and the population development strategy until 2030 has revealed several limitations:



While urbanization is happening rapidly, **TFR** in urban areas is always than the lower replacement level, which is a fundamental reason for pulling the national **TFR** below the replacement level.

04

If there is no drastic change in economic, social, and population policies, Vietnam's TOTAL FERTILITY RATE (TFR) will continue to decline further below 2.1 and remain low for a long time, following the path of China and all developed countries that have gone through this. (According to rough population forecasts in the base scenario, Vietnam's population will be 5.2 million in the year 2500 and 136,000 in 3000), as shown in FIGURE 3.2. The trend of the TOTAL FERTILITY RATE and GDP per capita of Vietnam from 1989 to the present is shown in FIGURE 3.1. From 2005 to 2023, Vietnam's GDP per capita grew at an average annual rate of 10.67% (current prices, not adjusted for inflation), and the TOTAL FERTILITY RATE remained relatively stable for 17 years, from 2005 to 2021, with an average of 2.07. In the next two years, 2022 and 2023, the TOTAL FERTILITY RATE declined (2.01 and 1.96, respectively).



FIGURE 3.1: TOTAL FERTILITY RATE AND GDP/CAPITA OF VIETNAM 1990 -2023 Source: General Statistics Office, WB (GDP/@Capita, 1990 - 2022)



FIGURE 3.2: VIETNAM POPULATION PYRAMID 2000 YEARS (1000 - 3000)

In 2210, according to the Baseline Scenario, the crude population is forecast to be 42.8 million people, equal to 40% of the population in 2050.

Time (year)



Three Risks:

Risk 1: The period of approximately 20–25 years after the TOTAL FERTILITY RATE (TFR) first drops below 2.0 poses a significant risk of "lulling" national leaders into complacency regarding the potential for declining economic growth, stagnation, and eventual self-destruction of the nation.

- In Japan, the TFR first fell below 2.0 in 1975 (TFR = 1.91). By 1996, the Japanese economy entered a stagnation phase lasting 29 years (1996–2024). This means economic stagnation emerged 21 years after the TFR dropped below 2.0, primarily driven by a labor shortage starting in 1995 (FIGURE 2.2).
- In South Korea, the TOTAL FERTILITY RATE (TFR) first dropped below 2.0 in 1984 (TFR = 1.74). After 35 years, in 2019, the economy entered a phase of stagnation, primarily due to a labor shortage that began in 2018 (FIGURE 2.5). This stagnation has now persisted for five years (2019–2023).

Three Risks:

Risk 1: The period of approximately 20–25 years after the TOTAL FERTILITY RATE (TFR) first drops below 2.0 poses a significant risk of "lulling" national leaders into complacency regarding the potential for declining economic growth, stagnation, and eventual self-destruction of the nation.

- Vietnam's TFR fell below 2.0 for the first time in 2023 (TFR = 1.96). With nearly two decades of TFR hovering around the replacement level (2002-2022), it is projected that Vietnam will face labor shortages and economic stagnation in approximately 25–35 years (2050–2060).
- By 2045, 5 to 10 years before the anticipated labor shortage, Vietnam's economy is likely to continue growing at a decent rate, leading national leaders to perceive the situation as "stable" and potentially neglect the critical need to ensure the Replacement Total Fertility Rate. Consequently, Vietnam risks following the path of Japan and South Korea.

Three Risks:

Risk 2: Over the next 25 years (2025–2050), if the government, business leaders, the Vietnam Fatherland Front and the people fail to demonstrate a unified and sufficient determination for Vietnam to achieve sustainable development and exist for another 500–1,000 years, the youth of this period will not feel a responsibility to marry and have at least two children for the longevity of the nation

Currently, a significant proportion of young people still aspire to marry and have two or more children. However, in the absence of clear national goals and coordinated solutions from the state, businesses, education systems, healthcare systems, and social welfare mechanisms to provide essential conditions—such as income, education, healthcare, labor conditions, and social insurance — fewer young people will be motivated to marry. Increasingly, they may opt to remain single, marry but have only one child, or choose not to have children at all.

By 2050–2060, approximately 25–35 years from 2023, Vietnam will enter a phase of economic stagnation due to a severe labor shortage.

Three Risks:

Risk 3: Ensuring a stable long-term **©**REPLACEMENT TOTAL FERTILITY RATE in Vietnam requires fundamental and strong changes in economic, social, and population policies, as well as in fostering happy families—something no country in the world has successfully achieved to date

A key lesson from East Asian and other high-income countries is that **governments must shift from setting minimum wage standards to implementing a minimum living wage for a "standard" family of four (two working adults and two children).** This policy will likely infringe upon the short-term interests of businesses (reducing profits and increasing wages for workers), and many businesses may resist this fundamental change using various arguments and methods.

Three Opportunities:

Opportunity 1: The fact that Japan and Korea had predicted their risk of self-extinction long time ago and that high-income countries and China were unable to maintain the RTFR are clear negative examples for Vietnam's sustainable development. Thus Vietnam would be more motivated to change its policy for perpetual existence of the community

Opportunity 2: Vietnam's TOTAL FERTILITY RATE (TFR) has only been significantly below the replacement level for two years (2023 and 2024). Coupled with Vietnam's cultural tradition of valuing family, the majority of young Vietnamese today still aspire to marry in adulthood and have two or more children. If there are breakthrough for sustainable national policies development, in 25-30 years, future generations of youth will continue to uphold the tradition of valuing family and childbearing.

Opportunity 3: Vietnam has already adopted Resolution 21-NQ/TW in 2017 on population development in the new era, and the Population Vietnam Strategy to 2030 (issued in 2019), with the primary goal of ensuring a stable RTFR.



RECOMMENDATIONS FOR AN INTEGRATED SOLUTION SYSTEM TO ENSURE SUSTAINABLE POPULATION AND SOCIAL DEVELOPMENT AS VIETNAM BECOMES A HIGH-INCOME COUNTRY

#1: The goal of national development is: Happy people, wealthy and strong country, everlasting nation, freedom, democracy, just and civilized society

In 1945, after the Declaration of Independence, President Hồ Chí Minh defined the goal for building and developing our country as:

"DEMOCRATIC REPUBLIC OF VIETNAM INDEPENDENCE – FREEDOM – HAPPINESS"

On October 17, 1945, in his "Letter to the People's Committees of Provinces, Districts, and Villages," published in the Cứu Quốc newspaper, President Hồ Chí Minh wrote: "If a nation is independent but its people do not enjoy happiness and freedom, then independence has no meaning."



#1: The goal of national development is: Happy people, wealthy and strong country, everlasting nation, freedom, democracy, just and civilized society

The 10th Party Congress in April 2006 identified the goal of socialism in our country as:

"Wealthy people, strong country, democracy, just and civilized society"

From these guiding goals of nation-building set by the Party, Uncle Ho and from the lessons learned over more than 50 years of development in currently wealthy countries, as well as in China and India, we need extensive research and discussions within the Party, among the public and with business leaders about the long-term goals for the country's development. This will help prevent the risk that, as a middle-income country transits to a high-income nation, Vietnam may fail to regenerate its population adequately, leading to a decline in labor force and population, economic stagnation, and eventual extinction after 200 years (with a population of only 42,8 million by 2210, a loss of 60% of the population).



#2: Only with the Vietnamese people can there be Vietnamese culture, and only with Vietnamese culture can there be a Vietnamese nation.

The sustainable development of the Vietnamese people is the foremost foundation for the country's development and the sustainable growth of the economy and society. Only with the Vietnamese people can there be Vietnamese culture, and only with Vietnamese culture can there be a Vietnamese nation.

To ensure that economic growth does not lead to labor force decline, population shrinkage, or national extinction, the entire society— the Party, the government, the Vietnam Fatherland Front, business owners, and all people- must reach a consensus: Should Vietnam continue to exist for another 300 or 1,000 years? From this, it must be agreed upon the irreplaceable role of a happy family in sustaining the labor force, population, and creating a happy nation. This includes the necessary conditions for family happiness, ensuring that every family has two or more children to guarantee a stable Replacement Total Fertility Rate



#3: Government policies, corporate measures, and the education of happiness in schools

Government policies, corporate measures, and the education of happiness in schools to prevent labor force decline and family breakdown must be enacted and implemented early, as soon as the TOTAL FERTILITY RATE (TFR) begins to fall below the replacement level.

#4: Patriotic Vietnamese people have the responsibility to have children

It must be affirmed that marriage and childbearing are the personal rights of citizens; however, patriotic Vietnamese people have the responsibility to have children so that the country does not face extinction and can develop sustainably. The government, businesses, and local communities must have coordinated policies and community initiatives to ensure that patriotic Vietnamese citizens can fulfill their sacred civic responsibility.





The government should transit from setting a minimum wage to establishing a minimum living wage for a family of four. Additionally, the government should raise the personal income tax deductions to more realistically reflect family circumstances, ensuring that workers have sufficient income to support two children without requiring excessive wage increases. For a family with two working adults to be able to have two children, their combined income should be enough to properly support four people (two adults and two children). The government, business owners, and workers (through trade unions) must align on the awareness and solutions to ensure that a family with two working adults can earn enough to adequately raise and educate two children.



The working hours of employees should be short enough (8 hours a day, 40 hours a week) to allow them time to find a life partner, care for children, manage family responsibilities, and pursue personal interests. A competitive housing market, supported and regulated by the state, is necessary to ensure that workers can rent or purchase homes at affordable prices, **so that the lack of housing does not become an insurmountable obstacle to marriage.**





Working conditions, maternity leave policies, salary and promotion systems in companies must encourage marriage and child bearing, ensuring no conflict between work and family responsibilities. Universal preschool education (for children aged 3 months to 5 years) should be implemented to allow parents to work and develop, even after childbirth and when their children are still young. It is important to develop both public and private education systems to ensure universal access to primary education, lower secondary education, and vocational training





Sharing responsibilities between husbands and wives in household chores, child-rearing, and truly achieving gender equality. Building a social environment that is friendly to children, mothers, and families, demonstrating society's respect for those who fulfill their civic responsibilities, contributing to sustainable development in labor and population. It is necessary to teach and establish counseling centers on how to have a happy marriage, be happy parents, and build a happy family, starting from secondary education and vocational training. Happiness studies should be taught as part of the curriculum at all education levels. A report on the happiness index of the Vietnamese people should be developed for each of the 63 provinces and cities and for the country as a whole, to be published every two years.





It is important to promote the traditions of cultural the Vietnamese people and local initiatives community to marriage encourage and childbearing, as they bring irreplaceable happiness to life pride in fulfilling civic and responsibilities.

should have The state should have practical Families the freedom to decide the number of programs to **support** infertile couples in having children. children and the timing of It is essential childbirth. to develop a system of reproductive health counseling and support services.



CONCLUSION

A COUNTRY THAT WANTS TO DEVELOP SUSTAINABLY, CONTINUE TO EXIST AND TO BE HAPPY FOR HUNDREDS AND THOUSANDS OF YEARS HAS TO ENSURE:

4. Cultural sustainability

5. Human sustainability

Requirements 4. and 5. are not included in the 17 United Nations Sustainable Development Goals 2015 - 2030.

2. Energy sustainability people

happiness



- **1. Environmental sustainability**
- **3. Increased labor productivity**
- 6. Democracy, government by the people, for the

7. Peaceful coexistence and cooperation with all countries for sustainable development and

THANK YOU

PROF. DR. NGUYEN THIEN NHAN

