"GOLD" POPULATION STRUCTURE AND SOCIAL SECURITY ISSUES OF VIETNAM: OPPORTUNITIES AND CHALLENGES

Prof, Dr. Nguyen Dinh Cu  
Institute for Population Studies and Social Issues Studies, 
National Economics University

Dr. Tran Thi Nhung  
Institute for Northeast Asian Studies,  
Vietnam Academy of Social Sciences

From the first Census (1979) to date, the Vietnamese "population picture" has changed rapidly. Population size increased from 52.742 million in 1979 to 85.789 million in 2009, ie increased about 32 million people. Besides, population structure has changed very strong, especially in the age structure of the population. The percentage of children under age 15 has decreased from 42.55% to 25%, the proportion of the population in the legal working age increased from 50% to 66%, and the elderly from 7% to 9%. Researchers and the media are talking about "gold" population structure in Vietnam. On the basis of analyzing the change in population in the past 30 years, forcasting the population in the next 50 years, this paper will make contribution to answer questions such as: How long the population bonus period of Vietnam will last? What are the main demographic characteristics of this period? How will the demographic changes in the past and in the future affect on the Vietnamese social security?


Age structure of the population is the total population divided by age or age group. Table 1 below shows the population structure of Vietnam by age group with a distance of 5 years, at the time of the Census of Population and Housing: 1979, 1989, 1999 and 2009.  
Table 1 shows the population structure by age in Vietnam is quickly changed: population ratio of almost all age groups increased or decreased markedly: Percentage of children in the group (5-9) years of age decreased nearly halved: from 14% in 1979 fell to 7.99% in 2009. In contrast, the proportion of people aged (15-65) rose sharply, from 53% in 1979 to 66% in 2009, especially the age group (30-54). In particular, elderly group has been quickly increased in which the 85 and older years old had increased by more than four times: from 0.16% in 1979 increased to 0.75% in 2009. This indicates aging population trend is going strongly.
Table 1: Population Structure by age of Vietnam (1979-2009)

<table>
<thead>
<tr>
<th>Aged group</th>
<th>1979</th>
<th>1989</th>
<th>1999</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>14.62</td>
<td>14.0</td>
<td>9.52</td>
<td>8.48</td>
</tr>
<tr>
<td>5-9</td>
<td>14.58</td>
<td>13.3</td>
<td>12.00</td>
<td>7.99</td>
</tr>
<tr>
<td>10 - 14</td>
<td>13.35</td>
<td>11.7</td>
<td>11.96</td>
<td>8.54</td>
</tr>
<tr>
<td>15 - 19</td>
<td>11.40</td>
<td>10.5</td>
<td>10.77</td>
<td>8.54</td>
</tr>
<tr>
<td>20 - 24</td>
<td>9.26</td>
<td>9.5</td>
<td>8.86</td>
<td>9.21</td>
</tr>
<tr>
<td>25 - 29</td>
<td>7.05</td>
<td>8.8</td>
<td>8.48</td>
<td>8.85</td>
</tr>
<tr>
<td>30 - 34</td>
<td>4.72</td>
<td>7.3</td>
<td>7.86</td>
<td>7.94</td>
</tr>
<tr>
<td>35 - 39</td>
<td>4.04</td>
<td>5.1</td>
<td>7.27</td>
<td>7.61</td>
</tr>
<tr>
<td>40 - 44</td>
<td>3.80</td>
<td>3.4</td>
<td>5.91</td>
<td>7.01</td>
</tr>
<tr>
<td>45 - 49</td>
<td>4.00</td>
<td>3.1</td>
<td>4.07</td>
<td>6.40</td>
</tr>
<tr>
<td>50 - 54</td>
<td>3.27</td>
<td>2.9</td>
<td>2.80</td>
<td>5.29</td>
</tr>
<tr>
<td>55 - 59</td>
<td>2.95</td>
<td>3.0</td>
<td>2.36</td>
<td>3.36</td>
</tr>
<tr>
<td>60 - 64</td>
<td>2.28</td>
<td>2.4</td>
<td>2.31</td>
<td>2.32</td>
</tr>
<tr>
<td>65 - 69</td>
<td>1.90</td>
<td>1.9</td>
<td>2.20</td>
<td>1.86</td>
</tr>
<tr>
<td>70 - 74</td>
<td>1.34</td>
<td>1.2</td>
<td>1.58</td>
<td>1.70</td>
</tr>
<tr>
<td>75 - 79</td>
<td>0.90</td>
<td>0.8</td>
<td>1.09</td>
<td>1.43</td>
</tr>
<tr>
<td>80 - 84</td>
<td>0.38</td>
<td>0.4</td>
<td>0.55</td>
<td>0.88</td>
</tr>
<tr>
<td>85+</td>
<td>0.16</td>
<td>0.3</td>
<td>0.38</td>
<td>0.75</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


2. Dependency ratio and "gold" population structure

2.1 Dependency ratio

The economic development of a country is of course heavily dependent on the quantity and quality of the "economically active population" group. However, if the quantity of "economically active population" is crowded but the number of "economically unactive population (dependent)" is more crowded, expenditure will be more and therefore the rate of savings and investment will be lower and the socio-economic development will be stalled.

The relationship between the two population groups could be reflected by the "dependency ratio", defined by the following formula:

\[
\text{Dependency ratio} = \frac{\text{economically unactive population}}{\text{economically active population}} \times 100
\]
Obviously, the ability to involve or not in economic activities "closely associated" with the human age. Clearly, the population of age groups, such as: (0-4), (5-9) and (85 or older) age groups could not or no longer able to work to generate income ... In contrast, almost of the population in age groups, such as: (25-29), (30-34), (35-39), ... are involved in economic activities, ensure social survival and development. So, to calculate the "dependency ratio", people usually takes certain age ranges of population to be the numerator and denominator in the above formula. The issue is which age range?

Currently, there is no consensus on the above age range among Vietnamese scientists, statists and between Vietnam and some countries in the world, international organizations. It was found that, due to academic, professional and technical level and the increasing of employees’ longevity, the starting and ending age involves in economic activities increasing. Based on the actual participation in the economic activities of each age group in Vietnam and to make international comparisons, the below formula is used to calculate the dependency ratio:

\[
\text{Dependency ratio} = \frac{P_{0-14} + P_{65+}}{P_{15-64}} \times 100
\]

In general, dependency ratio of the population indicates that for every 100 people of working age, there will be corresponding figures of how many people outside of this age range or in other words, for every 100 people of working age, how many dependents do they have to support? Dependency ratio of the population can be separated into youth dependency ratio and the old-age dependency ratio.

**Youth dependency ratio**

\[
\text{Youth dependency ratio} = \frac{\text{Population from 0 to 14 years old}}{\text{Population in the age range (15 to 64)}} \times 100
\]

The youth dependency ratio indicates that for every 100 people of working age, there are how many children at age from 0 to 14 years old.

**Old-age dependency ratio**

\[
\text{Old-age dependency ratio} = \frac{\text{Population 65 and above years old}}{\text{Population of working age (15-64)}} \times 100
\]

The old-age dependency ratio indicates that for every 100 people of working age, there are how many people 65 and above years old.

Table 3 shows that in Vietnam, the dependency ratio fell sharply, from 89.5 to 46.4, almost halved after 30 years (1979-2009). This result is due to family planning promotion, rapidly fertility declining leading to child dependency ratio lower than one half. Meanwhile, the old-age dependency ratio is increasing, but not much.
Table 3: Dependency ratio of Vietnam, 1979-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>1979</th>
<th>1989</th>
<th>1999</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth dependency ratio</td>
<td>80.6</td>
<td>69.1</td>
<td>55.1</td>
<td>36.6</td>
</tr>
<tr>
<td>Old-age dependency ratio</td>
<td>8.9</td>
<td>8.2</td>
<td>9.6</td>
<td>9.8</td>
</tr>
<tr>
<td>General dependency ratio</td>
<td>89.5</td>
<td>77.3</td>
<td>64.7</td>
<td>46.4</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations from Table 1 data

"Dependency ratio" does not stop falling, which is constantly reduced the "burden" on each working age person. This creates good conditions for national economy and family could have savings for development investment.

2.2 The concept of "gold" population structure

When the "dependency ratio" down to 50 or less, it means that 100 working age people have to "burden" only 1 or less than 50 dependents, or in other words, every two of working age people have no more than one dependents and this is "gold" population structure. According to the survey on population changes, labor source and family planning in Vietnam, in 2006, the "dependency ratio" is only 49.9. It means that Vietnam's population has entered the period of "gold" population structure. Note immediately that this is only the "gold" in quantity, not considering about the quality. A series of questions are posed, such as how long the "gold" population structure period will last? When dependency ratio will be lowest? How does the "gold" population structure impact on the development in general and on Vietnamese social security in special? What are the opportunities and challenges? .... To answer these questions, first of all, it is necessary to forecast about the "gold" population structure in Vietnam.

3. Forecast the process of "gold" population structure in Vietnam

Population Division of the UN predicted that "demographic bonus period" of countries such as: Singapore, Japan, South Korea would come to the end in 40 years. The miracle development period of these countries was associated with "demographic bonus period". As noted above, Vietnam has "Gold" population structure from 2006. Based on the results of the 2009 census which the common software for population projections is used (Spectrum 3.1), population projections for the period 2010-2059 has been made, with some acceptable hypothesis, which corresponds to 3 projections are 3 options for fertility assumptions to 2059 are as follows:

Option 1: very low birth rate (similar to Japan nowadays), the average number of children of a woman was 1.4 (TFR = 1.4)

Option 2: low birth rate, the average number of children of a woman was 1.6 (TFR = 1.6)

Option 3: Birth rates are slightly higher than the current downward trend and level of socio-economic development, international integration: (TFR = 1.8).

The forecast results show that changes in the dependency ratio according to all 3 options of the projection as shown in Figure 1 below.
From these results, time to enter and finish the golden population period in Vietnam could be defined as the table below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Goals of the period &quot;golden population structure&quot;</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Year to enter</td>
<td>2006</td>
<td>2006</td>
<td>2006</td>
</tr>
<tr>
<td>2</td>
<td>Year to end &quot;gold&quot; population structure period</td>
<td>2050</td>
<td>2047</td>
<td>2044</td>
</tr>
<tr>
<td>3</td>
<td>Total year</td>
<td>45</td>
<td>42</td>
<td>39</td>
</tr>
</tbody>
</table>

*Source: Nguyen Dinh Cu and partners (2009)*

Under all three options, the lowest "dependency ratio" is about 43, reached in 2016. At that time, Vietnam's population is about 92.2 to 92.4 million people.

4. "Gold" population structure in Vietnam and social security needs

Social security can be understood in a very broad sense, and in fact there have been many different definitions. This study uses the concept of the International Labor Organization (ILO): "Social security is the protection which society provides for its members, through a series of public measures, against the economy and social distress that otherwise would be caused by the stoppage or substantial reduction of"
earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and
death; the provision of medical care; and the provision of subsidies for families with children."
From this concept, it could be seen that population situation in general and population in "golden
structure" in particular have a huge impact on the social security needs, expressed by the following
criteria:

4.1 Annual Social security needs for birth giving woman
Why Vietnam has golden population structure from 2006? Table 3 shows that, the determinant is the
youth dependency ratio fell sharply. Why young dependency ratio decline? Of course, the birth rate
plummeted. Indeed, in 1992, Vietnam's birth rate was 30‰. If fertility was maintained, with population
of 85,846,997 as of 2009, the number of Vietnamese babies born out of this year would be: 85,846,997 x
0.03 = 2,575,991 babies. However, by promoting family planning, birth rate in 2009 was 17.6‰, so the
actual number of baby was: 85,846,997 x 0.176 = 1,511,311. That was down 1,064,680 million births. If
each birth giving woman had 4 months\(^1\) of maternity leave, with the current birthrate, Vietnam needs to
ensure social security for about 500,000 of women whose income were temporarily stopped. Although
this number was high but has fallen more than 350,000, compared to the birth rate in 1992.

4.2 Social security needs for the people implemented family planning measures
The reason for rapid fertility decline in Vietnam is the number of people implemented family planning
methods increased. According to the Social Insurance Law of 2006, using IUD for birth control, women
have 7 days off, sterilized person have 15 days off. The results of survey on April 1, 2010 showed that
there were 6,517,774 women inserted IUDs, 512,262 people sterilized. This was the cumulative number
of people who were in childbearing age. This indicated that the need to ensure social security for family
planning implementation went up to 53,308,348 days or nearly 1460,000 people/ year.

4.3 Social security need for abortion women
Fertility declined partly due to abortion. This birth control measure is very common in the 1990s. The
number of abortions in 1992 at State Medical alone are: 1.33 million, in 1993: 1.20 million, 1994: 1.25
million, 1995: 1.20 and 1996: 1.22 million ... Thanks to good supply and usage of family planning services,
the number of abortions in 2010 is only 127,024. According to the Social Security Act of 2006, when
suffered miscarriage, abortion or stillbirth, female workers are entitled to have ten days maternity leave if
the fetus’ old was less than a month, twenty days if the fetus’ old was from a month to less than three
months, forty days if the fetus’ old from three months to less than six months, and fifty days if the fetus’
old was six months or above. If the average number of day off was 20 for each case, social insurance needs
for the above people in 2010 is up to 2,540,480 million days or nearly 7000 people / year.

\(^1\) From 2 February 2013, maternal leave increase to 6 months
4.4 Demand for social security for the cases “child sick, mother leave”

According to Social Security Act of 2006, when children under 3 years old got sick, mother could stays up to 20 days per year. As mentioned above, compared to 1992, the birth rate of Vietnam in 2009 has reduced 1,064,680 million births. This means that the demand for social insurance was reduced for:

\[ 1,064,680 \text{ million mothers} \times 20 \text{ days} = 21,293,600 \text{ days / person, or about 58,339 persons / year} \]

4.5 The demand for social security for the cases “child dead, mother leave”

Due to economic and social development, the mortality rate of children under 1 year of age in Vietnam declined rapidly. In 1994, this ratio was 45.2‰, in 2009 only 16‰. In reality, there were 1,511,311 newborn babies in 2009. If the death rate of children under 1 year of age of 1994 was used, the number of children born in 2009 died before 1 year of age were: 1,511,311 x 0.0452 = 68, 311 children. However, with the death rate 16‰, this number would be: 1,511,311 x 0.016 = 24,181 children, that is, reduce the number of deaths of children under 1 year was 44,130 children.

According to the Social Security Act of 2006, cases of children under the age of sixty days were dead, mother was entitled to 90 days off calculating from the date of giving birth; 30 days if the child dies from 60 days or above calculating from the child’ death day. Thus, due to the reduction of child mortality, the demand for social insurance was decreased, at least:

\[ 44,130 \times 30 \text{ days} = 1,323,900 \text{ million days / person} = 3,627 \text{ people / year} \]

4.6 Unemployment Insurance

Features of Vietnamese population in “gold” structure period is both the percentage and quantity of population in the working age (15-64) in reality will increase during the first 20 years (1999-2019) at to about 68-69% of the total population and then this rate decrease. However, economically active population rate still increased and will reach a maximum number of about 72 million people (Table 5)

| Table 5: Population change trends in the age group (15-65) |
|---------------------------------|-------|-------|-------|-------|-------|-------|
| 1999   | 2009 | 2019 | 2029 | 2039 | 2049 | 2059 |
| Option 1 | Quantity (million) | 46.66 | 58.65 | 66.13 | 70.09 | 71.49 | 69.39 | 64.55 |
|         | Percentage         | 61.14 | 68.37 | 69.77 | 69.46 | 68.81 | 66.93 | 64.5  |
| Option 2 | Quantity (million) | 46.66 | 58.65 | 66.13 | 70.14 | 71.84 | 70.30 | 66.43 |
|         | Percentage         | 61.14 | 68.37 | 69.64 | 69.09 | 68.26 | 66.21 | 63.83 |
| Option 3 | Quantity (million) | 46.66 | 58.65 | 66.13 | 70.18 | 72.20 | 71.23 | 68.33 |
|         | Percentage         | 61.14 | 68.37 | 69.52 | 68.72 | 67.72 | 65.51 | 63.14 |

Source: Nguyen Dinh Cu and partners (2009)

Opportunities due to the "gold" structure are: plenty of labor source, few dependents leading to high savings and can improve, promote economic growth. However, plenty of and increased labor source also creates challenges for improving the quality of labor and employment. According to the General Statistics Office, in 2010, the unemployment rate in Vietnam was 2.88%, of which 4.29% was in urban and 2.3% in rural area.
Besides, underemployment rate, corresponding to the areas was: 3.57%, 1.82% and 4.26%. This means that 1,548,902 unemployed and 2,043,952 underemployed persons, in total of two groups are 3,692,854 people need social assistances. If the proportion of the population of working age just as in 1979, the total number of underemployed people is only 2,853,569. Thus, golden population structure has increased the need to ensure social security for unemployment, underemployment up to 839, 285 people.

4.7 To ensure social security for workers switching careers
In 2009, agricultural labor in Vietnam accounted for 51.5% of total employment. In Socio - Economic Development Strategy 2011 – 2020, this number is set only about 30-35% in 2020. This means that, even with the goal of 35% of agricultural workers, there would be about 10 million people to switch careers, in which many are farmers who lost their land for industrialization. During the golden demographic structure, the proportion of people age 40 and older increased and accounted for a large proportion of the total population. However, this age group met a lot of difficulties in career change but have to change, especially people lost land. Thus the need to ensure social security for workers switching careers will be great.

4.8 Social security for the elderly
According to the laws of Vietnam, 60 years or older people are considered elderly. Along with the general trend in the world, the Vietnamese elderly have been continually increased both in number and percentage (Table 6).

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (Million people)</th>
<th>Elderly population (Million people)</th>
<th>Elderly population rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>53.74</td>
<td>3.71</td>
<td>6.90</td>
</tr>
<tr>
<td>1989</td>
<td>64.41</td>
<td>4.64</td>
<td>7.20</td>
</tr>
<tr>
<td>1999</td>
<td>76.32</td>
<td>6.19</td>
<td>8.12</td>
</tr>
<tr>
<td>2009</td>
<td>85.85</td>
<td>7.73</td>
<td>9.00</td>
</tr>
</tbody>
</table>


The data in Table 6 indicates that:
- Vietnam was at population aging threshold. The proportion of elderly in 2009 was 9%.
- The rate of population aging in Vietnam is faster than that of population growth and rising more and faster. If in 10 years, from 1979 to 1989, the population increased by 20%, the elderly increased 25%; in the period of 1989-1999, the comparative proportion is 18% and 33%. Looking at the whole period 1979 to 2009, the population increased 1.6 times and the elderly increased 2.08 times.
The explosion of births after 1954 and lasted for decades after that, and the birth rate plummeted in the 90s of the twentieth century which will continue to decrease, and will be the accelerating factors to push
quicker and stronger Vietnamese population aging process during the next years (Table 7).

### Table 7: Number of people 60 years and older

<table>
<thead>
<tr>
<th>Option</th>
<th>Target</th>
<th>2009</th>
<th>2019</th>
<th>2029</th>
<th>2039</th>
<th>2049</th>
<th>2059</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population</td>
<td>7.73</td>
<td>10.52</td>
<td>15.70</td>
<td>20.38</td>
<td>24.89</td>
<td>28.33</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.00</td>
<td>11.10</td>
<td>15.56</td>
<td>19.62</td>
<td>24.01</td>
<td>28.31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>7.73</td>
<td>10.52</td>
<td>15.70</td>
<td>20.38</td>
<td>24.89</td>
<td>28.33</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.00</td>
<td>11.08</td>
<td>15.46</td>
<td>19.36</td>
<td>23.44</td>
<td>27.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Population</td>
<td>7.73</td>
<td>10.52</td>
<td>15.17</td>
<td>20.38</td>
<td>24.89</td>
<td>28.33</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.00</td>
<td>11.06</td>
<td>14.85</td>
<td>19.12</td>
<td>22.89</td>
<td>26.18</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Nguyen Dinh Cu and partners (2009)*

All options were showed that in 2019, the number of elderly people in Vietnam will exceed 10 million. Then, each decade will increase by about 5 million and reaching about 28 million by the end of the forecasting period.

Elderly people in Vietnam, mainly resides in rural areas, are farmers and works in agricultural sector. In 2005, more than 74% of elderly lived in rural Vietnam. Among the elderly, only about 16-17% have pension or disable allowance, more than 10% of elderly got priority allowances for making great contribution to the country. Thus, still over 70% of elderly currently live by their own labor, by assistance of children and families. Meanwhile, in the rural area, land is scare, productivity and income are low, and savings for old age are little. According to Decree No. 06/2011/ND-CP, from 1 March, 2011, the dependent elderly who are 80 years and older, with no pension, social insurance allowances (about 46 thousand people) entitled to get social allowance of 180,000 Vietnamese Dong a month, total is 2.16 million Dong/year. This means that total expenditure on allowances for 80 years and above group is about 1,000 billion Dong/ year. Ensuring social security for the elderly has become large and a bigger problem for Vietnam.

### 4.9 Demand for ensuring social security related to deaths.

Along with the aging population, the death rate in Vietnam will also increase. For example, in 2005, this ratio was 5.3% and, this rate increased to 6.8‰ in 2009 and 2010. This meant that, in 2010, it has:

$$86,747,807 \times 0.0068 = 589,885 \text{ deaths}$$

Currently the state has implemented death allowances to the people who have compulsory, voluntary insurance and their families receive monthly death allowance.

It is clear that from the 1979 until now, Vietnamese population has changed rapidly in both size and structure with the tendency of increasing the size, reducing the birth rate. The continuously increasing the rate of elderly people has shown that the Vietnamese aging population trend has been strongly going
on. However, Vietnam is now at the stage of Golden population structure and the general dependency ratio fell sharply.

Demographic structure in Vietnam has a great impact on social security needs. Besides the positive effects such as increasing the number of people in the working age which led to reduce the number of dependents, capable of raising savings, contributing to economic growth. At this stage, the use of birth control methods and naturally aging population explosion in the period 2019-2029 and strongly in the coming years have increased the demand for social security in Vietnam.

To limit the problems appeared in the period of golden population structure, Vietnam has been taking steps and implementing policies and national strategies on social security to improve the quality of social welfare services to cope with the aging population trend. However, to create, implement appropriate policies, in addition to the efforts of the State, of all people, Vietnam really needs to learn from experiences, and help from abroad, especially from Japan. a country which has cultural similarities with Vietnam and a lot of valuable experiences in solving social security issues in general, for elderly in particular.

Reference


