Review Article

DEMOGRAPHIC WINDOW OF OPPORTUNITY IN NEPAL

Hom Nath Chalise*

The demographic dividend (or window of opportunity) is the period during which a country's population experiences age structures that are highly favourable for development. Greater proportion of population becomes young and working age group. This cuts spending on dependents and spurring economic growth. Demographic dividend has importance in the national development if it is understood well and planned well for the national development. Nepal has already entered in demographic window of opportunity and this dividend phase ends around 2045. Government is lacking to utilize this dividend in the absence of stable government and proper policy requirements.

Keywords: Demographic dividend, window of opportunity, demographic transition andsupport ratio.

INTRODUCTION

According to United Nations Population Fund (UNFPA, nd), demographic dividend means "the economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15-64) is larger than the non-working-age share of the population (14 and younger, and 65 and older)." In other words, it is "a boost in economic productivity that occurs when there are growing numbers of people in the workforce relative to the number of dependents." Demographic dividend occurs when a falling birth rate changes the age distribution, so that fewer investments are needed to meet the needs of the youngest age groups and resources are released for investments in economic development and family welfare (Ross, 2004). Demographic dividend has importance in the national development if it is understood well and planned well for the national development. UNFPA stated that, "A country with both increasing numbers of young people and declining fertility has the potential to reap a demographic dividend (UNFPA, nd).

While some economic demographers have focused primarily on economic variables (GDP growth, employment, savings, asset accumulation), others have noted that the dividend extends to improved performance in institutions -- healthcare, education, and governance/legitimacy (Gribble & Bremner, 2012). Institutionalists argue that these institutions function best when the demand is relatively low and the availability of trained adults is high.

The period during which the most advantageous age structures are in place is called the demographic window of opportunity (or simply the "demographic window"). There are two demographic methods to roughly estimate the length of the window. The UN Population Division (2004) suggested that the window is open when 0-14 year-olds make up less than 30 percent of the population AND those 65 or older make up less than 15 percent. Alternatively, the window may be

* Dr. Chalise is Vice-President of Population Association of Nepal, Kathmandu, Nepal and Research Coordinator in Jeevan Bikas Samaj, Katahari-2, Morang, Nepal.

estimated as those age structures between a median age of 26 and 41 years (Cincotta, 2018). In other words, the length of the window is actually measured over "age-structural time".

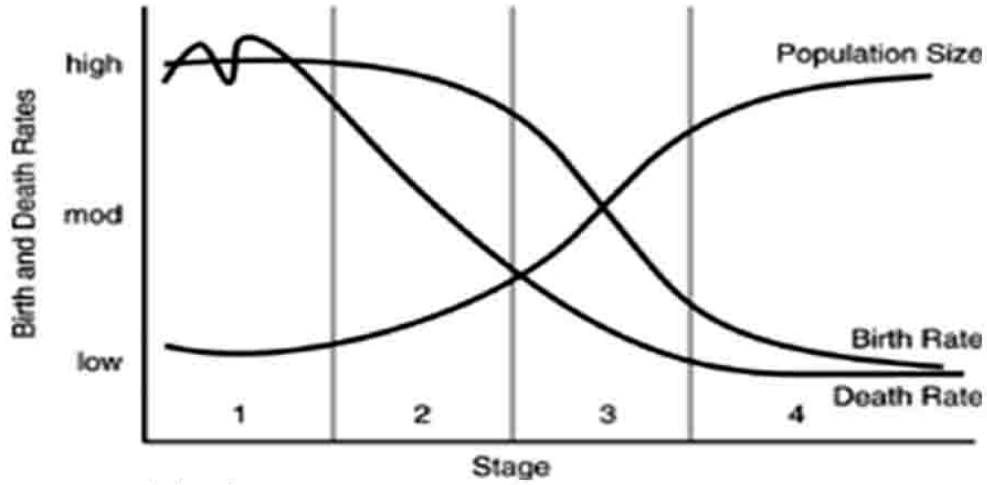
There is also an economic "life-cycle method" to determine when age structures are most advantageous. Lee and Mason, in their National Transfer Accounts website, have identified average life-cycle income and consumption patterns from data that NTA teams have collected. As one might expect, their research finds that actual patterns differ among countries (Lee &Mason 2011, also ntaccounts.org).Politics seem to function most smoothly during the demographic window (Cincotta, 2008/09, 2015).

Achieving a demographic dividend requires that each country understand the size and distribution of its population, its current and projected age structure, and the pace of population growth. The demographic dividend, however, does not last forever. There is a limited window of Opportunity (Ross, 2004). In time, the age distribution changes again, as the large adult population moves into the older, less-productive age brackets and is followed by the smaller cohorts born during the fertility decline. When this occurs, the dependency ratio rises again, this time involving the need to care for the elderly, rather than the need to take care of the young.

Demographic transition

A demographic window of opportunity is created by the process of the demographic transition. The demographic transition is illustrated by Figure 1, where the difference between the birth rate and the death rate is the population growth rate. As long as the birth rate is higher than the death rate, population growth is positive and so the population size keeps increasing.

Figure 1: The demographic transition



Source: McCarthy (2001).

The demographic transition can be described by the four stages represented in figure 1. In stage 1, birth rates and death rates are high. Stage 2 is characterized by declining mortality rates. Stage 3 then illustrates the decline in birth rates as a result of social and behavioural change. Finally, in stage 4 the population stops growing (McCarthy, 2001).

The larger surviving youth cohorts (also called 'baby boomers') caused by the decline in child mortality move upward in the age distribution, eventually increasing the size of the working-age population while it also decreases the size of the younger cohort. The latter is due to the fact that this generation is followed by smaller groups as a result of the fertility decline. While the youth cohort (baby boom) generation moves upward in the age distribution, adult mortality rates start to decline. So when the youth cohort becomes old the relative size of the older aged group grows increasingly larger. The latter phase (stage 4 in Figure 1) is where most developed countries are currently in and where the population is ageing (Bongaarts, 2009). The developing world is undergoing a demographic transition with a lag compared to the transition of the developed world. The important difference between the two is the speed at which the transition is happening. For the developed world the demographic changes have been gradual whereas the developing world is experiencing arapid transition.

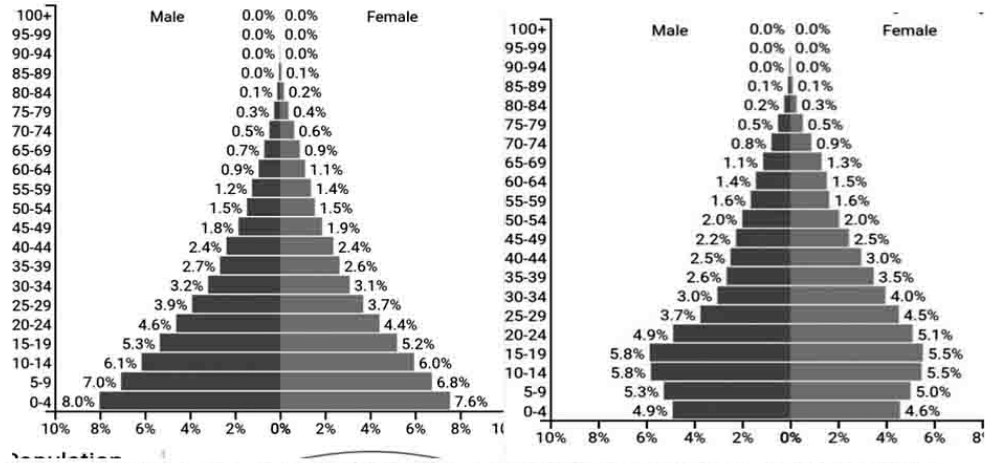
The demographic dividend can be created by the added productivity of the large group of working-age population combined with the lower proportion of resources that have to be invested in child care, schooling and caring for the elderly. In other words, the children and the elderly produce much less then they consume while on the contrary working adults produce more than they consume on average (Mason, 2005). The demographic dividend or demographic gift arises due to the more rapidly increasing of the working-age population relative to the total population. The increase in the working-age share is related to the decrease in the age dependency ratio. The child-aged (or youth-aged) population (under 15 years) and the old-aged population (65 years and over) decrease relative to the workingage population2 during the demographic window of opportunity.

Nepal's demographic transition and aged society

With decreasing fertility rate and improved health care facilities in Nepal, the death rate is on decline, this indicates that by the year 2017 persons above age of 65 will increase and will be 5.9 percent (UN, 2015) of the total population. This statistics clearly indicates for more health care and social security. In Nepal, the total fertility rate (TFR)—the number of children that would be born to a woman if she were to survive till the end of her reproductive years and bear children in accordance to current age-specific fertility rates—was more or less constant until the mid-80s, at around 6.3. It began to rapidly decline thereafter. According to Chalise & Brightman (2006), during the period of 1981 to 2001, Nepal's Total fertility rate decreased from 6.3 to 4.1, Crude death rate decreased from 13.5 to 9.6 and life expectancy increased from 49.0 years to 60 years. According to UN world prospects report 2015, TFR of Nepal is 2.32, CDR 6.5 and life expectancy increased to 69.01 years. It shows over the last three decades, Nepal has experienced very rapid demographic changes i.e., significant declines in its total fertility rate, crude death rates, decrease in population growth, alongside significant improvements in life expectancy.

Due to the declining fertility rate, declining mortality rate and increasing life expectancy, the young population under 15 is decreasing but the relative size of the population in the 15-59 age group is increasing. Comparison of the population pyramid of the Nepal (1997-2017) clearly shows that the new cohorts in recent years are shrinking. So there is no doubt that Nepal is in a demographic transition and stands to gain its demographic dividend.

Figure 2: Population pyramid of Nepal 1997 and 2017



Source: Population pyramids of the world from 1950 to 2100)https://www.populationpyramid.net/ nepal/2017/

On the other hand the proportion of elderly population 65+ years in increasing continuously (Table 1). Percentage of elderly was 1.9 percent in 2050, 3.3 percent in 1980, 3.8 percent in 2000, 5.0 percent in 2010 and 5.9 percent in 2017. UN projection shows that Nepal will reach in aging society (7% elderly 65+) in 2028 and aged society (14% elderly 65+) in 2054. It will take 26 years for Nepal, to reach from aging society to aged society.

Changing potential support ratio

A potential support ratio, which is the ratio of people aged 15–64 years per one person aged 65 years and older in the population. In 1950, when the population was relatively young, there were 31.3 working-age people per one old-age adult. However, as the population ages, the ratio of working-age people to old-age dependants is on the decline. A detail how the support ratio is changing over time is shown in Table 1. By 2017, the potential support ratio has declined to 10.7 working-age people per one elderly person. This ratio is projected to decline at even faster rates. By 2050, this figure is projected to be 5.5 working-age people per one elderly person, half of today's ratio in another 31 years.

Table 1: Proportion of population in different age group and support ratio, 1950-2060

Year	Age group			Dependency ratio			Support ratio
	0-14	15-64	65+	Child	Old	Overall	65+
1950	0.386	0.595	0.019	64.87	3.19	68.07	31.31
1960	0.403	0.572	0.025	70.45	4.37	74.82	22.88
1970	0.409	0.562	0.029	72.78	5.16	77.93	19.38
1980	0.414	0.553	0.033	74.86	5.97	80.83	16.76
1090	0.425	0.540	0.035	78.70	6.48	85.18	15.43
1996	0.415	0.548	0.037	75.73	6.75	82.48	14.81
2000	0.410	0.552	0.038	74.27	6.88	81.16	14.53
2010	0.372	0.579	0.050	64.25	8.63	72.88	11.58
2017	0.310	0.631	0.059	49.13	9.35	58.48	10.69
2028	0.253	0.676	0.071	37.42	10.50	47.93	9.52
2050	0.174	0.700	0.126	24.86	18.00	42.86	5.55
2054	0.166	0.691	0.142	24.02	20.55	44.57	4.87
2060	0.156	0.669	0.175	23.32	26.16	49.48	3.82

Source: United Nations(2015). *World population prospects: The 2015 revision.*

Demographic window of opportunity

Demographic changes are dynamic, the time period within which a country can reap a demographic dividend is finite, and is called the “demographic window of opportunity.”Although Nepal is projected to age at rapid rates, projections of Nepal’s population age structure also suggest that it will remain a relatively young country for a number of years into the future. As a country progresses through the demographic transition, shifts in the age structure cause the working-age population to increase relative to the dependent children and elderly populations. This results in the potential for a demographic dividend, which is the accelerated economic growth that may result from this favourable demographic scenario.

This demographic dividend however is not guaranteed. Only when combined with strategic and timely investments in human capital and savings, can this favourable demographic scenario transform the economic prospects of individuals and societies?

According to Amin et al. (2017) Nepal’s demographic window of opportunity, at 55 years, is similar to that of Indonesia, Malaysia, and Taiwan, all of which have either already experienced or are experiencing their windows of opportunities at more advanced stages of their development . In Nepal window of opportunity started at 1992 and will end in 2047. It’s already 25 years has gone and now another 30 years is left.

Table 2: Demographic window of opportunity of selected country

Country	Year		Length
	Start	End	
Thailand	1966	2010	44
China	1968	2012	44
Singapore	1966	2012	46
Hong Kong	1964	2011	47
South Korea	1968	2016	48
Taiwan	1963	2014	51
Indonesia	1973	2025	52
Malaysia	1966	2021	55
Nepal	1992	2047	55
Japan	1930-35	1992	59.5
Philippines	1966	2055	89

Source: Amin et al., 2017.

DISCUSSIONS

The demographic dividend, however, does not last forever (Ross, 2004). There is a limited window ofopportunity. In time, the age distribution changes again, as the large adult population moves into the older, less-productive age brackets and is followed by the smaller cohorts born during the fertility decline. When this occurs, the dependency ratio rises again, this time involving the need to care for the elderly, rather than the need to take care of the young

The demographic dividend can be created by the added productivity of the large group of working-age population combined with the lower proportion of resources that have to be invested in child care, schooling and caring for the elderly. In other words, the children and the elderly produce much less then they consume while on the contrary working adults produce more than they consume on average (Mason, 2005). The demographic dividend or demographic gift arises due to the more rapidly increasing of the working-age population relative to the total population. The increase in the working-age share is related to the decrease in the age dependency ratio. The child-aged (or youth-aged) population (under 15 years) and the old-aged population (65 years and over) decrease relative to the workingage population during the demographic window of opportunity.

All countries pass through the demographic transition, but they differ in the pace and timing of such a transition. Different regions of the world are in various stages of the demographic transition. The demographic transitions in Africa, Asia and Latin America began after the transition started in the developed world and are still underway (Bongaarts, 2009). Some developing countries have only just begun a demographic transition. In South Central Asia and much of Sub-Saharan Africa mortality and fertility rates are beginning to drop. Sub-Saharan Africa (SSA) seems to be a special case with respect to its demographic transition. SSA is still

experiencing high fertility rates with slow adjustments to lower levels, high population growth and a low life expectancy (Attanasio et al., 2006).

Bloom et al.(2003) identify the three most important mechanisms that "deliver" the demographic dividend: (1) Labour supply, the volume, age-distribution and spatial spread of which are demographic questions but the quality and skills of which are due to education and other factors; (2) savings; and (3) human capital, the quantum of which is essentially also a demographic factor, but the exploitation of which is a function of social and cultural norms and the way public and private sector enterprises, and small/family businesses/farms are organized. They go on to say that "the demographic transition has significant effects on investments in human capital, effects of which are the least tangible, but may be the significant and far-reaching". Finally they point out that "All these mechanisms are heavily dependent on the policy environment" (Bloom et al., 2003).

When we talk about Nepal, she has already entered in the phase of demographic dividend. As pointed out by Amin et al. (2017), Nepal has 55 years of window of opportunity. We have already passed 25 years without any productive gains. On the contrary, out migration of youth increased to Middle East countries as a labour from the beginning of demographic window of opportunity. Increasing poverty, political instability and lack of right policy environment is the main reason of youth migration. Without a good economic and human development policy, sound institutions and proper investment and saving incentives, it could well be that the demographic opportunity is turned into a demographic burden.

At last, however, it is still not too late to address the situation. Importance of a proper policy to reap the benefits of the demographic dividend was demonstrated in East Asia and concerned authorities of Nepal should not delay in formulating social and economic policies to reap the demographic dividend.

CONCLUSION

The declining fertility, child mortality, declining dependency ratio, rising life expectancy along with gradually peaking working age population or that of the youth population indicates that the country is reaching the unique point of demographic bonus where it could exploit this demographic bonus to spur economic growth, provided that effective public policy is formulated and implemented.

REFERENCES

Amin, S., Bajracharya, A., Bongaarts, J., Chau, M., Melnikas, A.J. (2017). *Demographic changes of Nepal: Trends and policy implications*.Finalreport. Kathmandu: Nepal Planning Commission.

Attanasio, O.P., Kitao, S.,& Violante, G.L. (2006). Quantifying the effects of the demographic transition in developing economies, *Advances in Macroeconomics*, 6(1), 1-44.

Bongaarts, J. (2009). Human population growth and the demographic transition, philosophical transactions of the royal society. B. No. 364, 2985-2990.

Bloom, D.E., Canning, D., & Sevilla, J. (2003). The demographic dividend: A new perspective on theeconomic consequences of population change. Rand: Santa Monica.

Chalise, H.N.,& Brightman J. (2006). Aging trend: Population aging in Nepal. *Geriatrics and Gerontology International*, 6, 199-204.

Cincotta, R. (2018). The age-structural theory of state behaviour.A conference paper, ISA 2017.In W. Thompson (ed.)*Oxford reference encyclopedia: Empirical international relations theory*. Oxford: Oxford University Press.

_____ (2015). Demography and early warning: Gauging future political transitions in the age-structural time domain. *Journal of Intelligence Analysis*, 22(2),129-148.

_____ (2008/09). Half a chance: Youth bulges and transitions to liberal democracy. *Environmental change and security program report*, 13,10-18.

Gribble, J.N., & Bremner, J. (2012). Achieving a demographic dividend. *Population Bulletin*, 67.

Mason, A. (2005). *Demographic transition and demographic dividends in developed and developing countries*. Presented at United Nations expert group meeting on social and economic implications of changing population age structures, 31 August-2 September, Mexico City.

McCarthy, K.F. (2001). *World population shifts: boom or doom?* Rand: Population Matters.

Ross, J. (2004). *Understanding the demographic dividend*. Washington D.C.: Futures Group, Policy Project, accessed fromwww.policyproject.com/pubs/generalreport/demo_div.pdf.

United Nations Population Fund (UNFPA). (nd). *Demographic dividend*, accessed from http://www.unfpa.org/demographic-dividend

United Nations. (2004). *World population to 2300*. New York: United Nations. World Population Prospects (WPP), FERT/4: Total fertility by major area, region and country, 1950-2100 (children per woman) [Data file]. Retrieved fromhttps://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20(Standard)/EXCEL_FILES/2_Fertility/WPP2015_FERT_F04_TOTAL_FERTILITY.XLS.

https://www.populationpyramid.net.*Population pyramids of the world from 1950 to 2100*,