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## ***DRIVERS OF DEMOGRAPHIC CHANGE AND HOW THEY AFFECT THE PROVISION OF EDUCATION***

This paper provides an overview of the different demographic drivers that determine population trends. It explains how the demographic transition affects education demand, puts pressure on education budgets and triggers changes in education policy. Examples are drawn from Asia that witnessed the most rapid demographic change in the world since the 1970s.

## **Drivers of Demographic Change and How They Affect Education Service Provision**

### ***Education policies challenged by an unprecedented demographic transition in Asia***

Population trends have been closely associated to changes in national social sector policies and public investments. Established education policies have been challenged in recent decades by the impact of demographic trends such as countries' age structure, population densities and spatial changes. Asia that accounts for some 60 percent of the world total population has been particularly affected: the continent witnessed the most rapid demographic change in the world since the 1970s<sup>1</sup>. The Asia-Pacific's population has tripled in the past 65 years, and is expected to reach 4.84 billion in 2050<sup>2</sup>.

Examining the components of recent population trends, one can distinguish several *determinants*. Changes in population size and growth rates in Asia started with a sharp decline in mortality rates in the 1950s. This was followed by an increase in life expectancy, driven by unprecedented improvements in levels of living and in the health sector. After 1970 declines in fertility rates accelerated markedly, influenced by economic factors, urbanization, cultural factors<sup>3</sup>, migration and population policies. The combined effects of these trends changed fundamentally the age structure in most countries in Asia, undercutting the typically broad-based age pyramid of developing countries.

However, a wide range of situations exists across Asia. Variations among countries allow grouping them according to basic demographic characteristics. These include the progression of population growth rates; fertility and mortality rates; urbanization; pattern of migration and differences in the economic factors responsible for the timing and speed of these drivers of demographic change.

To illustrate this point, countries such as Japan, South Korea and Taiwan completed their so-called *demographic transition* (i.e. the movement from high levels of fertility and mortality to low levels), establishing a new balance of slow population growth at very low levels, close to or below population replacement rates. A smaller working-age population supports a growing population of elderly and much smaller school age population. This situation has prompted a reorientation in education policies. A second group includes countries such as China (1.4 billion population), Malaysia, Thailand and Vietnam. They are at the late stages of their demographic transition: in the next 20 to 30 years they will experience a notable decline in the working-age population with high old age dependency ratios. But for the time being they still benefit from the window of opportunity referred to as the *demographic dividend*, i.e. a large working-age population and low dependency ratios that fuel economic growth. A third group of countries continues to witness a relatively significant population growth. In countries like India (1.2 billion population), the Philippines as well as poorer nations such as Cambodia and Lao PDR population size increases strongly in spite of an overall slow downward progression of fertility and mortality rates. In order to benefit from the demographic dividend likely to lay ahead these may need to anticipate now the effects of existing demographic trends on social sector budgets, adapt public policies, investments and education resource management.

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<sup>1</sup> Currently Asia's 50 countries and territories account for a population of about 4.3 billion to which another billion is expected to be added by 2050. See: Zhongwei Zhao, Population change will shape Asia's future, in: East Asia Forum. Economics, Politics and Public Policy in East Asia and the Pacific, 17 March 2013.

<sup>2</sup> Asia-Pacific Human Development Report. Shaping the Future: How Changing Demographics Can Power Human Development. UNDP, New York: 2016, p. 3. These figures are based on UNDP regional classifications, the AP region encompassing 42 countries, see idem, p. 15

<sup>3</sup> F.ex. moral codes, religious doctrines, laws, marriage conventions and family organization.

### ***Declining fertility and child mortality rates***

Population trends and education developments are related in an interactive process. Education is one of the factors affecting fertility – by facilitating the implementation of population policies, increasing women’s access to the labor market, reshaping family and cultural patterns particularly in the cities (rising age of marriage, work-life balance, more intensive parenting of a smaller number of children etc.), among others.

In the 1960’s the average fertility rate (number of births per woman of child bearing age) was over 5 in most countries in Asia. This has now fallen to below the replacement rate of 2.1 children in many countries<sup>4</sup>. ‘Extreme cases’ are Hong Kong (1.1)<sup>5</sup>, the Republic of Korea (1.2) and Japan (1.4) but also Thailand (1.4); PR China and Vietnam (both 1.7) are among the countries holding ‘the middle-ground’; while India (2.5), the Philippines (3.0) and Pakistan (3.2) continue to display high fertility rates and stronger population growth.

These massive demographic changes will continue to impact on the delivery of education services. The most obvious impact has been to reduce dramatically the school age population in a majority of countries in Asia. However, sharply declining school age populations growth rates generally went along with some of the following other important demographic changes.

### ***Rapid urbanization***

A second key trend concerns the spatial location of the population, including school-age populations. Fifty years ago the largest part of the population in South and East Asian nations lived in rural areas with farming as their chief occupation. The majority of the children of rural households did not attend school at all or only to primary level. In many countries in Asia now, a large share of the population lives in urban areas. This is the case of countries such as Malaysia (72%<sup>6</sup>), the Philippines (48%), Indonesia (42%) or China (over 40%)<sup>7</sup>. In other countries urban proportions are much lower; these include for example India<sup>8</sup>, Thailand, Vietnam or Cambodia.

In all countries rates of urbanization are increasing rapidly<sup>9</sup>. Asia boasts some of the world’s largest cities with populations of over 10 million in the metropolitan areas such as DKI Jakarta and Metro Manila. In some countries<sup>10</sup> regional cities are now growing more rapidly than the metropolitan centers. Another feature impacting on education service delivery is that increasingly the formerly sharp distinction between urban and rural areas is being blurred: developments in transport and communication (TV, cellphone) have broken the isolation of rural areas and changed the conditions of life of rural populations.

These trends have contributed to the falls in fertility rates because of the higher cost of urban living; the higher participation of women in the labor force; and the absence of the need to have children to help out with farming activities and support of the elderly.

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<sup>4</sup> A fertility rate total of 2.1 children per women under conditions of low mortality is considered the replacement level.

<sup>5</sup> Fertility rates total for 2015, from: The World Bank Data

<sup>6</sup> ARI Working Paper N° 196 (2013), data are estimates for 2010

<sup>7</sup> R. Dobbs, S. Sankhe, Comparing urbanization in China and India, July 2010. Downloaded on 18/11/2015.

<sup>8</sup> Dobbs, Sankhe (2010) report an urbanization rate of 29% for India in 2005.

<sup>9</sup> Dobbs, Sankhe (2010) China forecast 2025: 64% urban population (plus 400 million); India forecast 2025: 38% (plus 215 million population living in cities).

<sup>10</sup> ARI Working Paper N° 196 (2013) mentions Thailand, and to a lesser extent Indonesia and Malaysia.

Urbanization has therefore contributed to change the location of school age populations. Higher densities of children in urban areas may reduce potential costs of schooling. However the resulting reduction in densities in rural areas may increase the costs of reaching the remaining rural school age population, particularly in the remotest areas. The significant increase in per capita urban income and growing business opportunities can be expected to drive urban education markets in the future: private school education, tutoring or other education-related investments by families to ensure the “success” of their children as well as life-long learning opportunities for adults and the elderly.

### ***Internal and external migration***

International migration in recent decades has had major effects on population growth in some countries in Asia. Population growth rates in Malaysia and Singapore have been raising above natural increases as a result of a strong influx of migrants from the region, in particular Indonesia, the Philippines, Bangladesh and more recently Cambodia and Myanmar. The Philippines on the contrary experienced a significant *out*-migration: at any given time about 10 percent of its workforce resides overseas<sup>11</sup>.

Most of the international in-migration though concerns low skilled workers moving *without* their families. As children stay back in their home country, it has no impact on the education system in receiving countries although it may contribute to shape the education situation of children from migrant workers staying back in their home country.

The situation is different for *internal* migration. It is much larger in volume than international migration. While internal migration does not affect national population growth rates it does have consequences for education service provision. These concern in particular migration from economically disadvantaged to more prosperous regions, and the rural-urban migration. Strong internal migration by families with children leads to shifts in enrolments which if important in size affect conditions of learning in the areas of in-migration (e.g. overcrowded urban schools, often in disadvantaged city areas) as well as those of out-migration (e.g. cost-effectiveness of small rural schools displaying very low PTR).

In countries such as China rapidly expanding urban centers act as a potent magnet, attracting low skilled male workers away from surrounding rural areas. Regulations relating to residency complicate the transfer of children across the education system. These regulations have meant that children of migrants have been educated in their home areas under the supervision of grandparents, or missed out completely on education.

### ***Education expansion facilitated by the demographic change***

Somewhat counterbalancing these trends have the massive increases in participation in schooling, driven by investment policies aimed at upgrading the national economy’s human resource base. In countries at the end of the demographic transition considerations related to economic competitiveness require education investments to maximize the potential in individual learners and overall competency levels in the work force. Rights-based arguments such as those formulated in the Millennium Development Goals and Education for All (EFA) Goals, or more recently the SDGs, have supported the drive towards universal primary education as well as a sharp expansion of education at lower secondary level (‘Universal Basic Education’) and beyond. Smaller increases in school populations facilitated the resourcing of this expansion under conditions of public budget constraints in many countries.

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<sup>11</sup> ARI Working Paper N° 196, 2013, p. 14

Most countries in Asia achieved close to universal participation in primary education and made strong strides towards achieving universal lower secondary over the past decade. The trend of extending years of formal schooling is well set – although a number of large countries (India, Indonesia, Bangladesh) still have some way to go to achieve universalization in lower secondary. In addition ECCE and upper secondary and tertiary education provide potential sources of expansion. However, a point will be reached, and has already been reached in many countries, when the expansion and lengthening of participation in schooling will not offset the fall in fertility rates.

### ***Shifting social sector budgets and institutional challenges***

Partly due to the expansion of participation and the need to strengthen the quality of education as a crucial element in improving human capital, source of economic growth, education has been relatively well served in the allocation of public resources. The share of the education budget as a percentage of GDP has increased almost everywhere, and in some countries dramatically so.

However population aging and the associated growth in the size of elderly populations in most Asian countries increases the competition for public budgets. Medical, public health care and social services required to meet the needs of the elderly already put, or soon will put, a severe strain on healthcare systems and the economy in economically more advanced countries in Asia. This comes under conditions of public budget constraints, including fiscal difficulties from a slowing global economy. As a result, education may not expect to be so generously treated in the future. Increasingly efficiency gains may be sought, or private sector resources to complement public education budgets, whereby emerging private education ‘markets’ may develop and education providers diversify.

At the same time it is important to recognize institutional difficulties in reorganizing education services. Education is the largest employer by far of any government department. Budget cuts or reallocations of resources, in particular reallocating or redeploying education personnel, or terminating their contracts constitute a major political challenge for any government. Similarly school closures are very difficult as rural communities rightly see the local school as a core component of a viable community life. Long-term implications of demographic changes therefore have to be anticipated decades ahead in order to plan for necessary adaptations of services over periods that span over several government terms in office.

### ***Concluding Remarks: The demographic transition triggering changes in education policies***

The different demographic drivers and their effects in terms of population changes have considerable implications for education. First, smaller numbers of children to educate will continue to go alongside education policies to increase skill levels in the working population through higher levels of learning for all.

Second, spatial changes of school populations are likely to affect the distribution of education resources across geographical areas within countries in ways that depend on national (economic, social, regulatory, even cultural) contexts. For example, higher enrolments in expanding metropolitan centers and regional cities may go along with increasing public investments in these areas while at the same time seeking cost-effective alternatives for ‘loosing’ rural areas (e.g. public school transport; distance learning). Demographic changes may reinforce as well the importance of existing policy alternatives, such as a stronger involvement of the private sector with implications for regulatory frameworks and institutional management practices.

Thirdly, demographic shifts have implications for the ways in which families educate their children that trigger new public sector responses. The increasing costs of childbearing (both direct financial costs and opportunity costs of women's interrupted career development) may further increase inequities between the rapidly growing segment of urban middle-class families and families from disadvantaged backgrounds in both urban and rural areas. Better-off families will attempt to increase their comparative advantage through 'intensive parenting'<sup>12</sup> (e.g. private ECCE, tutoring) to ensure the 'success' of their children in school and the labor market.

Forth, demographic changes trigger significant education policy changes. A smaller human capital base in countries in Asia (already existing in group-1 countries, soon to come in group-2 countries, and some way off still in group-3 countries) combines with pressures for higher economic output levels to improve or maintain living conditions. Education policies are likely to center around efforts to maximize improvements in human capital as a source for economic growth. Governments can be expected to prioritize investments in education quality to raise competency and skill levels in future working-age populations (and current working-age populations through life-long learning opportunities). Human resource development policies that maximize the potential of each individual will become central to national efforts to achieve broad social and economic development objectives.

Fifth, across the different groups of countries increases in private investments in education by individual households with the aim to maximize the potential of their children can be observed particularly in urban centers.. The increasing purchasing power of urban middle-class households is likely to further stimulate urban education 'markets'. Private education suppliers are likely to further expand their services, offering spaces for higher learning, specialized skills (e.g. informatics, foreign languages), 'modern' ECCE, private tutoring or life-long learning opportunities. In an increasingly competitive context targeted public investments may provide some sort of 'positive discrimination' for population segments unable to afford those costs. One resource management aspect in this context concerns the extent to which 'resources follow the pupil' and the appropriateness of resource levels in achieving stated equity objectives of policy.

In dealing with these changes, the formulation of *consistent long-term policies* that span over the terms in office of subsequent democratically elected governments is a major challenge for education policy. Sector management challenges relate to the *responsiveness of institutional frameworks* in adapting resource allocations to the requirements from changing enrolment pattern and strong social demand for education. A challenge for *public education budgets* includes the quality imperative and inclusion of all population segments for human capital maximization in a situation of fiscal constraints and growing potential of private markets, including for-profit education 'markets'.

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<sup>12</sup> Term used in ARO Working Paper N° 169, p. 13