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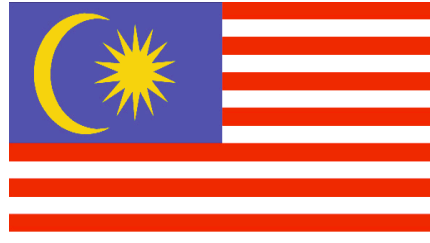
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MALAYSIA

*The closing window of demographic opportunity: adapting the
education system to support Malaysia's first nation agenda*

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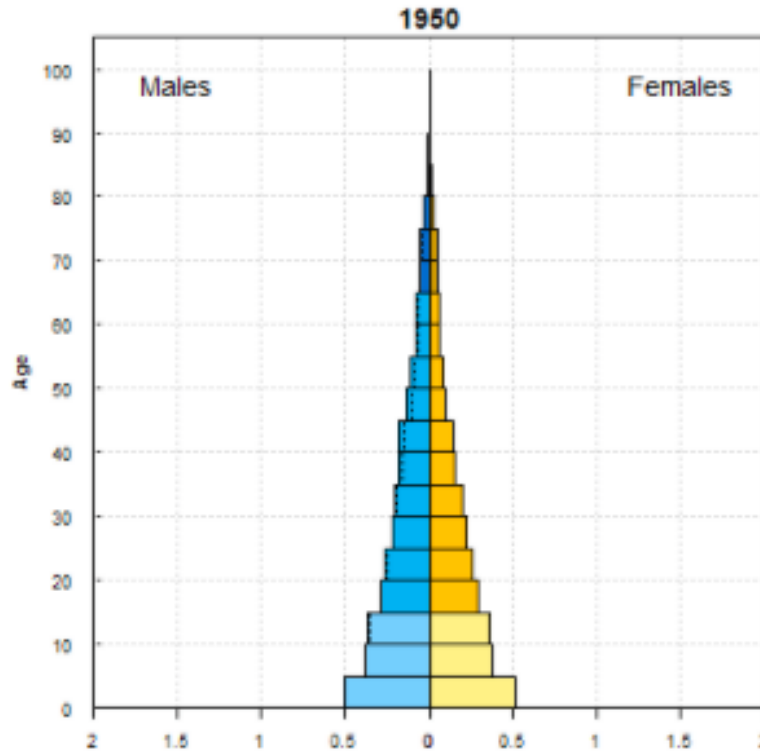
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1. Demographic ID Card Republic of Malaysia

Figure 1: Changes in age pyramids (1950, 2017, 2050)

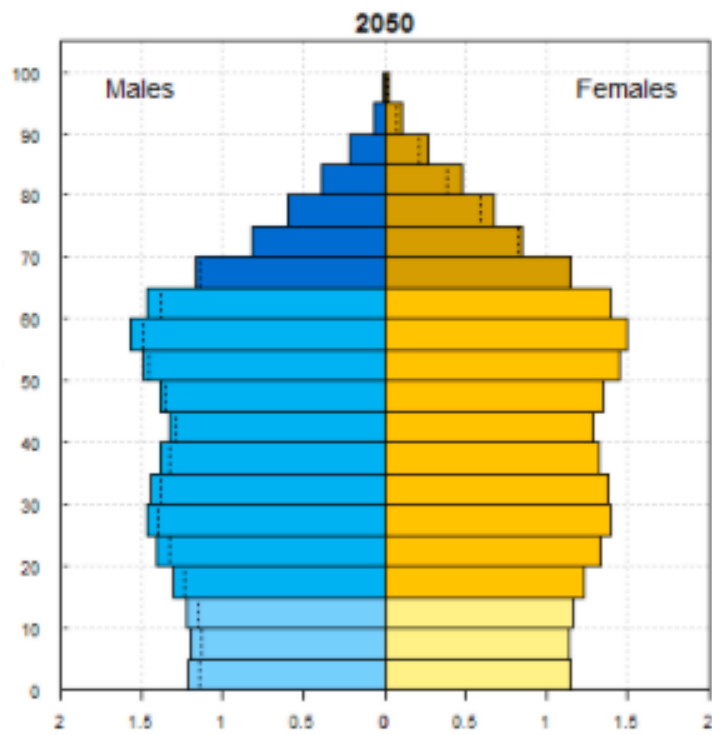
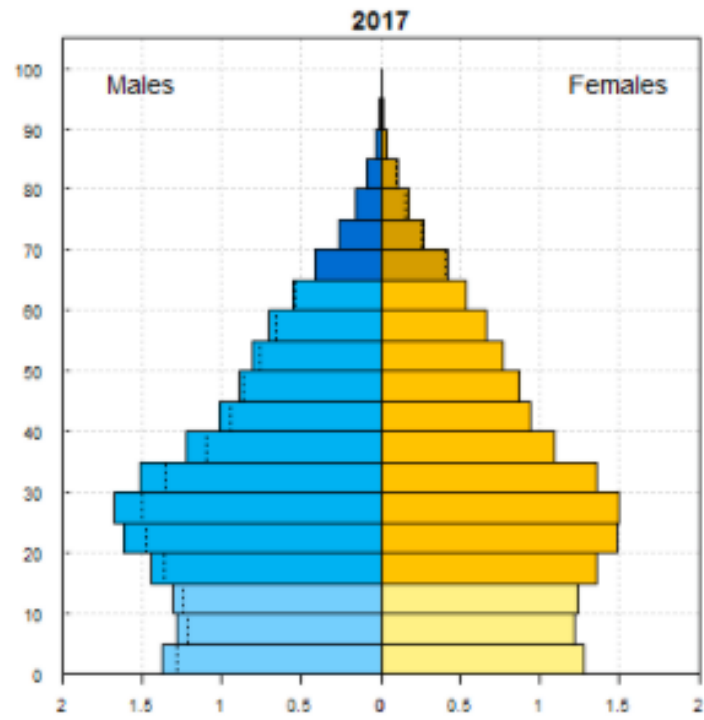


The three age pyramids illustrate past trends and projected changes in the population size and age structure of Malaysia between 1950 and 2050.

The broad based, slim pyramid of 1950 denotes a small and youthful population. The working-age population between age 15 and 64 supports a relatively large child population (age range 0 to 14) and a small proportion of elderly (aged 65 and above).

The 2017 pyramid shows a large population increase since 1950. The pyramid's shrinking base denotes declining fertility rates. The pyramid's extended belly pictures a large working-age population, largest at the age groups 20 to 35 years. Child dependency ratios are falling and old age dependency ratios raising.

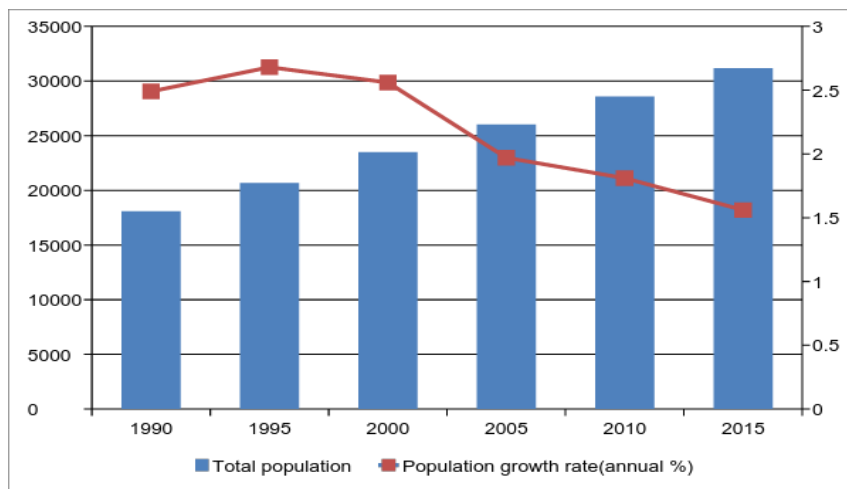
The third population pyramid covers projections for 2050. The bell-shape of the pyramid denotes an aging population with a large age group above 50, i.e. entering retirement age soon. The working-age population remains large though, implying still favorable demographic conditions for socio-economic development. The size and proportion of the child population (0 – 14 years) at the base of the pyramid are shrinking significantly. Before the end of the century, Malaysia is likely to have become an aged society with a small working population and high old age dependency ratios.



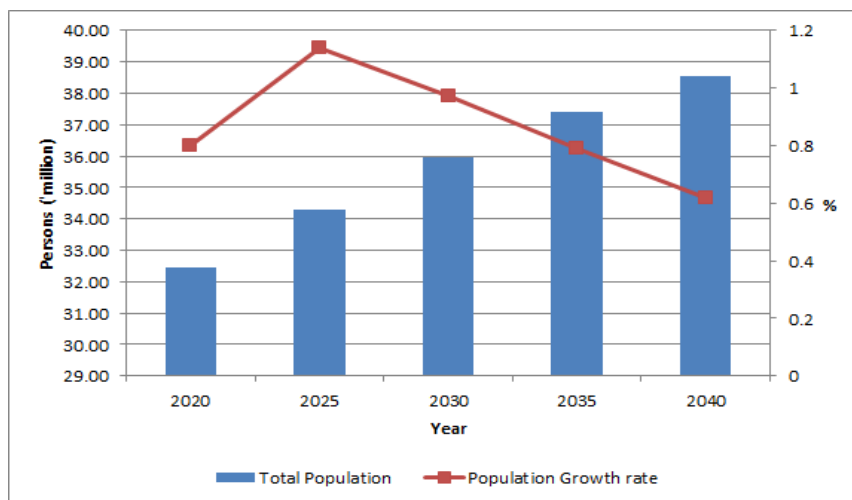
Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision.

Figure 2: Changes in total population: past trends (1990-2015) and future projections (2015-2040)

The two bar charts depict the change in population size, showing trends over the past 25 years (chart 1) and projections until 2040 (chart 2). The population almost doubled between 1990 and 2015 (from about 18.000 million to 31.000 million) albeit with declining growth rates. Population growth rates (depicted by the red graph) started decreasing after 2000. Chart-2 (using a different scale) shows a much slower population size increase from 2025 (increase dropping from roughly 3 million every five years since the 1990s down to 1 million every five years by 2035-2040).

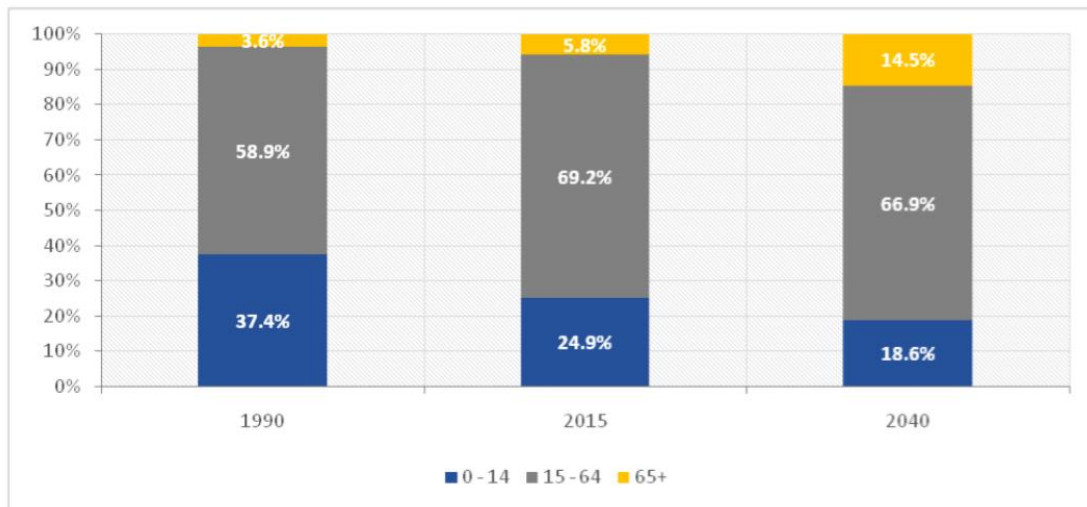


Source Chart-1: Department of Statistics Malaysia



Source Chart-2: Department of Statistics Malaysia

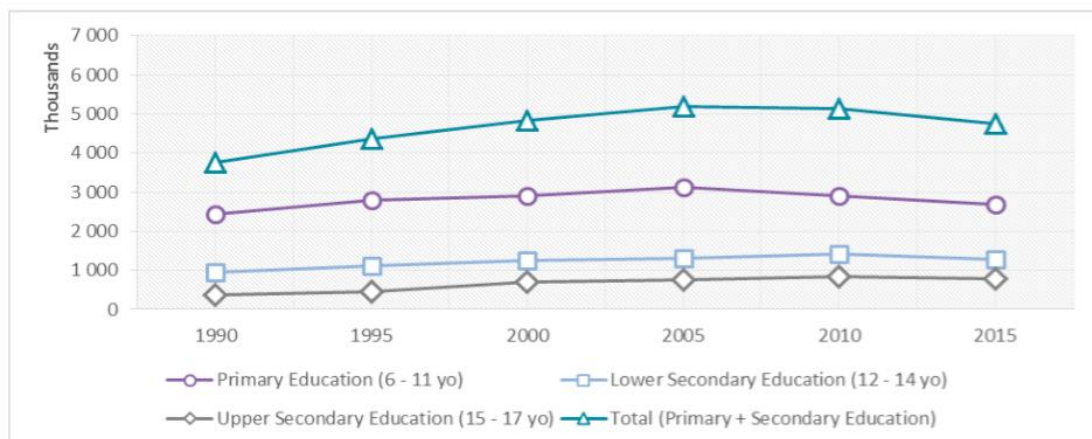
Figure 3: Population age structure (1990-2040)



Source: Department of Statistics Malaysia

As a result of trends depicted in Figure 2, Malaysia's population age structure is changing. The working age population is projected to decrease slightly in coming decades while the child dependency ratio decreases significantly. At the same time, old age dependency ratios increase significantly, projected to triple by 2040 compared with today.

Figure 4: Changes in school-age population (1990-2015)



Source: Ministry of Education, Malaysia

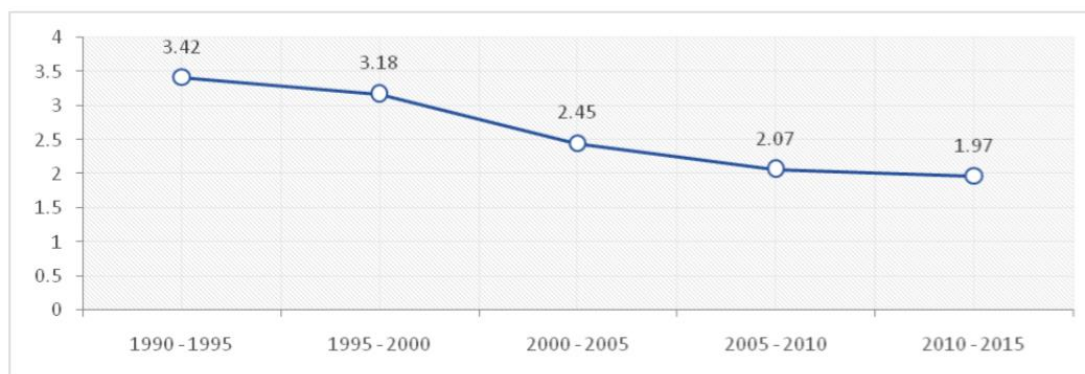
The graphs visualize the implications of the declining fertility rates since 1990 in terms of the size of the school age population (ages 6 to 17), by level of education. Overall, the size of the age groups (in millions) remained relatively stable since the 1990s. However, primary school population trends show a decrease since 2005 that over the next two decades will accentuate affecting all levels of education.

2. How demographic trends shape socio-economic development prospects

Favourable demographics supporting Malaysia's economic development. For over 40 years, Malaysia's socio-economic development has been shaped by the New Economic Policy (NEP) and its successor programmes. Since the 1970s Malaysia achieved a remarkable transition towards a broad based economy that benefitted from favourable demographic conditions. Population size increased significantly, and with it the size of the labour force. At the same time as the working age population increased dependency ratios decreased. An ambitious economic policy characterized by diversification and industrialization created sufficient employment opportunities for the rapidly expanding labour force. The larger population (in numbers and proportion) in gainful employment fuelled Malaysia's drive towards an upper middle-income country, contributing to cut poverty levels, increase savings and create opportunities for investment.

A changing population age structure. Fertility levels prevailing in Malaysia fell from over 5 children per women in the 1970s to a moderate level of about 3.5 birth per women in the 1990s, and continued to decline. Recently, the country reached below replacement fertility levels under 2.1 children per women.

Figure 5: Evolution of the fertility rate (1990-2015)



Source: UNDP, Human Development Report 2015

As a consequence, the age structure of the Malaysian population changed significantly. In 1970, just over half of the population (52%) was in the working age group; dependent children and youth accounted for some 45%. In 2015, the proportion of the working age population remains large, and stable, just under 70%, and the size has increased from 19 million to 21 million between 2010 and 2015. The Malaysia's population remains youthful: 25 per cent of its population is aged 15 or below; the largest working age groups are in the age range 20 to 30. The age structure is still favourable therefore in terms of benefitting Malaysia's economy. However, the country is at the point of operating of a major demographic shift that the Government

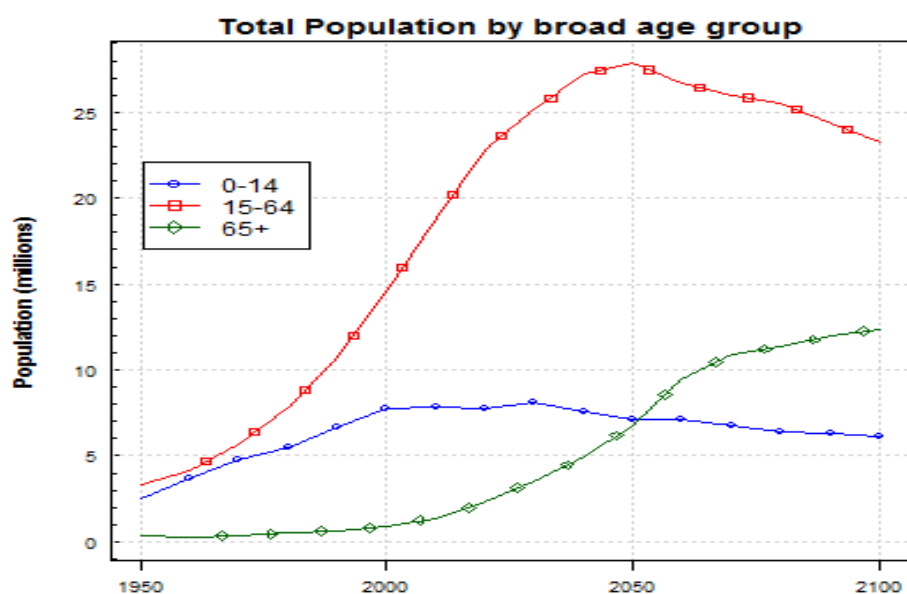
had been anticipating since a long time. The social and economic impacts of the ongoing demographic change towards an aging society will become visible within less than one generation.

Socio-economic and ethnic differentials. A country-specific feature are the significant fertility differentials among the three main ethnic groups constituting the population of Malaysia: Bumiputera, Chinese and Indian Malays – Bumiputera recording fertility rates roughly twice as high as Malays from the Chinese and Indian subgroups. Different regions differ sharply as well, linked to a combination of conditions. Low fertility rates prevail in states such as Penang, Selangor, Johore or Malacca that display higher levels of urbanization, educational attainment and socio-economic activity, and are inhabited by a higher proportion of Chinese and Indian subgroups than states with more rural characteristics and the Federal Territory of Kuala Lumpur with a higher proportion of Bumiputera. These differentials have implications for education demand across different geographical areas, urban and rural, across Malaysia's 13 Federal States and 3 Federal Territories.

Rapid urbanization as demographic driver. About 75 per cent of Malaysia's population today lives in cities, up from 50 per cent in the 1990s. The size of the urban population increased more than eightfold since the 1970s, to almost 23 million in 2015. This development was accompanied by an increase in demand for social services, including education. The driver was internal rural to urban migration. Main destinations were the economically vibrant Federal States of Selangor and the west coast, in particular Pulau Pinang. Recently, a counter-movement was observed with people moving to medium-size cities. As a result, the capital Kuala Lumpur, megacity and hub of economic activities, experienced negative net migration. High population densities in the inner city, raising living costs and improved transport facilities are encouraging people to move to suburban areas in Selangor. The rapid pace of urbanization triggered significant demographic shifts in recent decades. Providing new employment, educational opportunities and improved living conditions cities had a modernizing influence on the society, that among others translated into changing reproductive behaviours of families, contributing to drive fertility rates downwards.

The demographic window of opportunity is closing. The working age population size will peak in 2050, then start declining. After 2050, the size of the elderly population will for the first time exceed the size of the child population, and old age dependency ratios overtake child dependency ratios. This means that Malaysia has come towards the tail end of the demographic window of opportunity known as the "first demographic dividend", and by 2050 will enter the stage of an aging nation.

Figure 6:



Source: United Nations Population Division, World Population Prospects 2015

Investment in human capital has become an overriding Government priority.

Government policy since independence recognized the importance of the demographic dimension in socio-economic development planning. Early family planning efforts in the 1970s were reversed in the 1980s in favour of pronatalist policies aiming at delaying the attainment of replacement fertility level until the year 2070. The stated objective was to provide a large domestic market and large labour force to support the country's economic development. The relative failure of these policies – birth rates continued to decline in spite of generous fiscal and social advantages granted to families with more children – led the Government to abandon pro-births population policies in the early 2000. The Government's Vision 2020 (reviewed in 2018: becoming Vision 2025) and the 2010 Economic Transformation Programme (ETP) underscore the importance of human capital development in pursuing Malaysia's first nation status agenda.

Education Blueprint The recent Malaysia Education Blueprint 2013-2025 (for Higher Education 2015-2025) is part of reform initiatives to prepare a highly educated, skilful and innovative work force supporting Malaysia's transformation from an export-oriented, industry-dependent middle-income economy into a knowledge-based high-income economy with a stronger, diversified service sector. The Government is cognisant that this status will be much harder, or impossible, to reach, once the country's window of demographic opportunity closes, by 2050.

3. Changes on education demand from the demographic transition

For over three decades Malaysia has been investing heavily in education. The country has a diverse and comprehensive basic education school network, covering preschool, primary and (lower) secondary education to Year 11 (Form 5). It provides for 21 different types of schools including different language mediums at primary level, religious schools and specialist science and technical-vocational schools.

Impressive gains in education attainment levels but insufficient to meet Malaysia's high-income agenda. Education attainment levels in the population increased consistently. Table 1 below provides some indication of the human capital available within the current working age population as approximated by education level.

Table 1: Highest level of education attained in the population

Year	% Tertiary	% Secondary (lower & upper)	% Primary	% No schooling
2010	15	61	15	9
2000	10	56	22	12
1980	3	31	38	28

Source: Education Blueprint, Ministry of Education, Malaysia (2014)

Existing amounts of human capital seem insufficient to propel the country into the first nation status it ambitions. On the other hand, figures improve with each new cohort, due to the system's extensive coverage and fairly equitable access to basic education.

Enrolment challenges at higher levels. Consistently high enrolment rates in basic education mean that in 2017 over 92% of Malaysia's young adults completed at least lower secondary education; less than 1% have no schooling at all (2012 HIS). Coverage at upper secondary level, the more academic Form 6 (lower and upper) and tertiary level remains below the average for middle-income countries though. HIS data indicate that 66% of 18 year-olds were enrolled in upper secondary in 2012, and 54% of 19 year-olds. Only 37% completed upper secondary. The relatively small pipeline of students going tertiary education (certificate, diploma, degree) translated into a tertiary gross enrolment rate of 36% in 2012 – considerably below the OECD average (72%) or high-income comparator countries in the region such as Korea or Japan.

A reverse gender gap in secondary and tertiary education. An interesting feature is the reverse gender gap existing at secondary (lower and upper) and tertiary levels. Gender gaps in basic education have been closed across geographical areas, socio-economic quintiles and ethnic groups. A 5% enrolment gap (2012) in favour of girls at secondary level (lower and upper combined) exist and an almost 10% gap in favour of girls at university level. Although women have been able to acquire increasingly greater amounts of human capital through the education system, this has not

translated into higher female labour participation though. Less than half of the Malaysian women in working age participate in the labour market.

System expansion, particularly at secondary level. Malaysia's public education expenditure has been high through past decades: around 16% of total government spending. Expenditure on basic education (preschool through to secondary) has been more than twice the ASEAN average in terms of GDP percentage. Since the early 2000s, investments concerned in particular secondary education. Secondary schools increased by 18% over the decade 2004 to 2013 while the number of primary schools remained stable. The system witnessed a raise of 30% in the number of teachers employed at both primary and secondary level. Large budgets have allowed for a professionalization of the teaching force, and competitive salaries, a virtual guarantee of employment (until recently) and a relatively low workload made teaching an attractive profession. Compared to regional neighbours non-salary recurrent costs are relatively high in absolute terms, with small differentiation between larger primary and secondary schools. Capital expenditure is approximately 11-12% of the annual budget, with most investment in secondary facilities (70%).

Declining student numbers. This expansion took place as the number of students enrolled in public primary and secondary schools declined. Between 2004 and 2013, numbers of primary teachers rose by 37% even as the numbers of students in primary fell by 9%. By 2016, secondary education was affected, reflecting smaller cohorts of primary students moving into secondary. Pupil-teacher ratios had been very generous by international standards in Malaysia. Investments led PTR to fall further: by 2013, PTR at primary level was 11.5 pupils per teacher; and 13 at secondary. One driver of enrolment drops in rural schools was continuous rural to urban migration. The phenomenon is compounded by an increased competition from the private sector (a 25% increase in 2016 compared to 2013). Increasing numbers of small schools in rural areas and the need to open new classrooms in densely populated urban areas, are making the maintenance of an expanding school network more expensive while student numbers overall are on the decline.

Quality of learning outcomes below expectations. Education quality remains a challenge. The education system as a whole has not been delivering the quality of learning outcomes that might be expected given high levels of spending. Standardized assessments of students' cognitive skills (PISA 2009, 2012, TIMSS 2007, 2011) shows a mixed evolution of performance. Malaysia came 52nd out of 65 countries undertaking the triennial PISA in 2012. This somewhat disappointing performance occurred across the ability range. Only 5% of children reached the average level of performers in high-income comparator countries Korea or Japan. Disparities were also larger across different socio-economic groups than in those aspirational countries. Raising levels of qualification among the teaching force in order to improve the quality

of teaching and learning is a major thrust of recent education reform initiatives under the Education Blueprint 2013-2025.

4. Education policy options and debates

The Malaysia Education Blueprint 2013-2025 charts the course of reform over the coming decade. Aligned with the new Economic Model (NEM) and the 10th Malaysia Plan, the Blueprint contributes to national goals for human capital formation necessary to realize Malaysia's high-income agenda. The Blueprint addresses issues related to the progressiveness and effectiveness of resource allocations; it critically notes Malaysia's high spending on education against declining enrolments and deteriorating test scores. Major reform thrusts include a control of personnel costs, a transformation of the teaching profession to improve teaching quality, and governance reforms to strengthen school-level accountability. As the Blueprint also notes, not policy and planning, but plan *implementation* remains the main challenge.

Reform implementation challenges. Malaysia's education system is highly centralized. Nationally determined regulations and norms governing the resourcing and management of schools are applied across a highly complex and diverse school network, inducing rigidities when it comes to adapt to evolving local conditions, including those associated with demographic change. As a result of internal migration to cities, home to three quarters of Malaysia's population today, large numbers of rural schools are under-enrolled, in extreme cases catering for one or two pupils, while numbers of over-crowded urban schools operate double-shifts. Regulations designed in a different context to provide education access to *all* school-aged children regardless of location have become hurdles in efforts to adapt the school network to changing demographic and social conditions. A particular challenge concerns staffing norms, and the nationally set remuneration structure. Differentials in remuneration applied to attract and retain teachers in remote schools in Sabah and Sarawak, cannot be applied although it would be useful today to much less remote schools in Peninsular Malaysia under current conditions of desertification of rural schools.

Demographic pressures and a centralized staffing system. In the light of declining enrolments, Malaysia faces an oversupply of teachers, and education administrators. Demographic changes threaten to reduce PTR to very low levels. The government's decision in 2010 to increase the retirement age from 55 to 60 years resulted in a temporary fall in the retirement rate, and a bulge in the teaching force. In response, the Government put a two-year moratorium in 2011 on entry into the 27 primary teacher training colleges. This measure however was offset by higher recruitment of more expensive university graduates with the result that the number of teacher trainees increased, with additional pressures on the personal emoluments budget. Many teachers have moved into administration. The Malaysian education system employs some 101,000 administrators, or about one in five of the MOE workforce, all

administrative levels included. There are 11,000 administrators in the central ministry, filling 300 categories of posts. This heavy administration does not match well with plans under the Education Blueprint to shift responsibilities to the state and district level and ultimately, to the school level. Personnel expenditure for emoluments consumed over 80% of the recurrent budget in 2016, compared to under 77 in 77 in 2014, squeezing non-salary recurrent expenditure. While personnel emoluments expenditure rose by over 5% between these years, expenditure on supply and services fell by 9%. Malaysian teachers are well remunerated (around 1.1 times GDP per capita). They provide relatively few hours of classroom instruction and benefit from advantages such as paid study leave. Not surprisingly, there is low turnover: teachers tend to stay in the profession until retirement. The government acknowledges that those who have come into the profession in the past two decades have not been drawn from the highest performing students – hence an emphasis under current reform initiatives to attract “the best and brightest” students into teaching through stronger academic selection and the creation of salary incentive systems under the school performance banding system (NKRA). To anticipate the impact of demographic changes, addressing staffing numbers and qualifications, and personnel management issues in the education sector remains perhaps the most important challenge.

Raising the human capital in the work force, with particular attention given to female labour. Targets in the Education Blueprint include a 100% enrolment at upper secondary, by 2020 – thus increasing the pool of students moving into post-secondary and tertiary education, and raising levels of qualifications available in the future labour force. Faced with the prospect of a falling population size from 2050, the government is seeking a new quantity-quality trade-off, maximising the potential across smaller cohorts of students who are joining the labour market. As indicated, females outperform males in terms of participation rates at upper secondary education and tertiary education. Women with higher levels of education tend to join, and stay on, in the labor market, contributing to an extended pool of human capital. The labor market in Malaysia has been generating enough new jobs to keep up with population growth. Many of these jobs are being created in the services sectors, preferred for employment by female professionals. Higher overall participation rates since 2012 were driven not only by an increase of the working age population but also by higher female labor force participation. Research suggests that bringing into the labor market a higher proportion of women currently absent from the labor force would generate a growth dividend critical to accomplish Malaysia’s high income agenda. Skill shortages being a major bottleneck in Malaysia’s development path involvement of women in the labor market constitutes a resource that should be harnessed for Malaysia to achieve its aspirations.