



Wherefore the Productivity of Singapore's Ageing population?

Christopher Gee
IPS Research Associate

In a public lecture organised by the Institute of Policy Studies, Professor Wolfgang Lutz, Founding Director of the Wittgenstein Centre for Demography and Global Human Capital, posed the question: "Is Population Ageing Bad for Productivity Growth?"¹

Citing comprehensive studies on the impact of population ageing on innovation and productivity growth in Europe as well as global data, Professor Lutz argued that a highly educated workforce combined with higher labour force participation amongst men and women of all ages could actually offset the adverse effects of an ageing workforce and population.²

"Fluid Intelligence" vs "Crystallised Intelligence"

A finding of Prskawetz et al. (2006) was that at an individual level, there is a peaking of important cognitive abilities associated with problem-solving, speed and reasoning ("fluid intelligence") from the age of 30, whilst job performance in tasks that are more dependent on accumulated knowledge and experience ("crystallised intelligence") tends to increase or stabilise up to a late age. Hence an older workforce could compensate for the diminution in their fluid intelligence with sustained gains in crystallised intelligence, especially if reinforced with continual education programmes.

Noting that health-adjusted life expectancy is increasing in developed countries such as Singapore, thus allowing older workers to remain economically active for longer, Professor Lutz suggested that a flexible approach to retirement, a focus on continuous education and training and higher labour force participation could enable a country's ageing workforce to sustain economic growth in the long-run.

Profile of Singapore's Current Labour Force

How applicable are the above findings to Singapore? Although Singapore today has a highly educated workforce, and labour force participation rates amongst older workers are high —

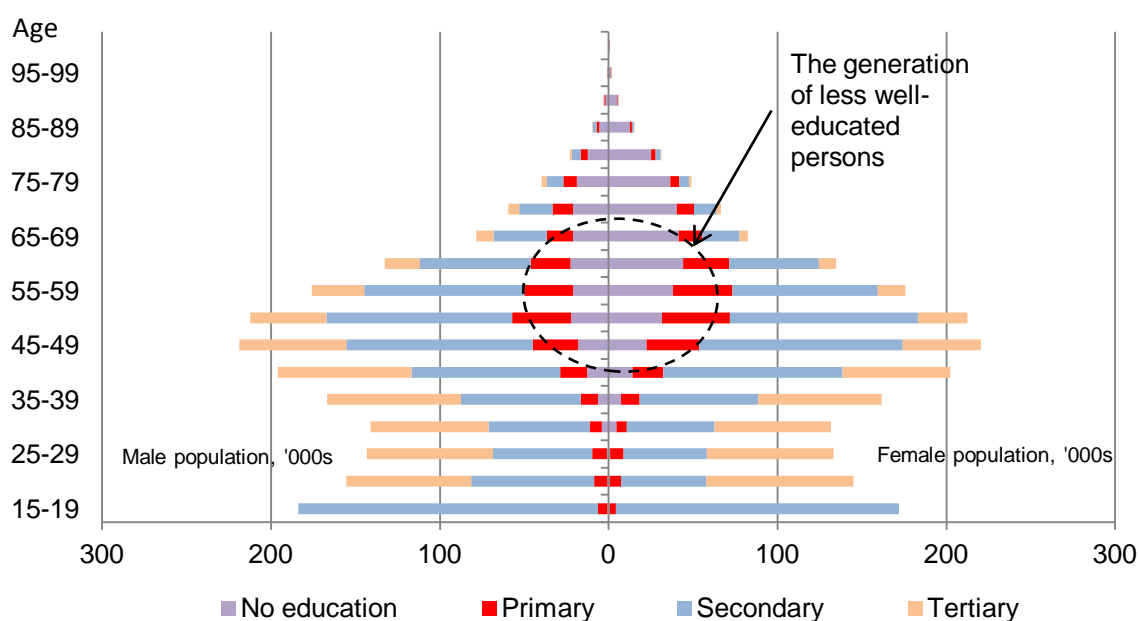
¹. Professor Lutz, Distinguished NUS Professor and Founding Director of the Wittgenstein Centre for Demography and Global Human Capital, gave a public lecture in Singapore on "Low Fertility, Human Capital Development and Economic Growth in an International Context", organised by the Institute of Policy Studies on 19 February 2013.

². See *The Impact of Population Ageing on Innovation and Productivity Growth in Europe* (Prskawetz et al. 2006) and "The Demography of Educational Attainment and Economic Growth" (Lutz, Cuaresma and Sanderson 2008, 1047–8).

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64 per cent of residents aged 55 to 64 were employed in 2012³ — there is a significant cohort in the baby-boomer generation with low educational attainment (with only primary education and below; see Figure 1) that may be difficult to re-skill and boost productivity. Some of these less well-educated older persons would still be in the workforce, thus boosting older worker labour force participation rates, but employed in relatively poorly paid jobs. According to the Ministry of Manpower's *Yearbook of Manpower Statistics 2012*, there were 73,200 persons aged 60 years and older employed as at June 2012 as plant and machine operators, cleaners and labourers, or 40 per cent of the workforce in this age group.

Figure 1. Singapore population aged above 15 by sex, education and age (2010)



Source: Singapore data extracted from Projection of Populations by Level of Educational Attainment, Age and Sex for 120 Countries for 2005–2050, published by IIASA World Population Program and Vienna Institute of Demography

Requisite labour productivity improvements in the medium-term (through to 2030, for example) may need to be founded upon the rest of the population with higher educational qualifications. Policies should also be introduced for older workers, irrespective of previous educational attainment and current employment status, to assist them in their continued development through active adult education programmes. To ensure employment opportunities for such re-skilled workers, continued education and training initiatives will have to be allied with appropriate work placement schemes.

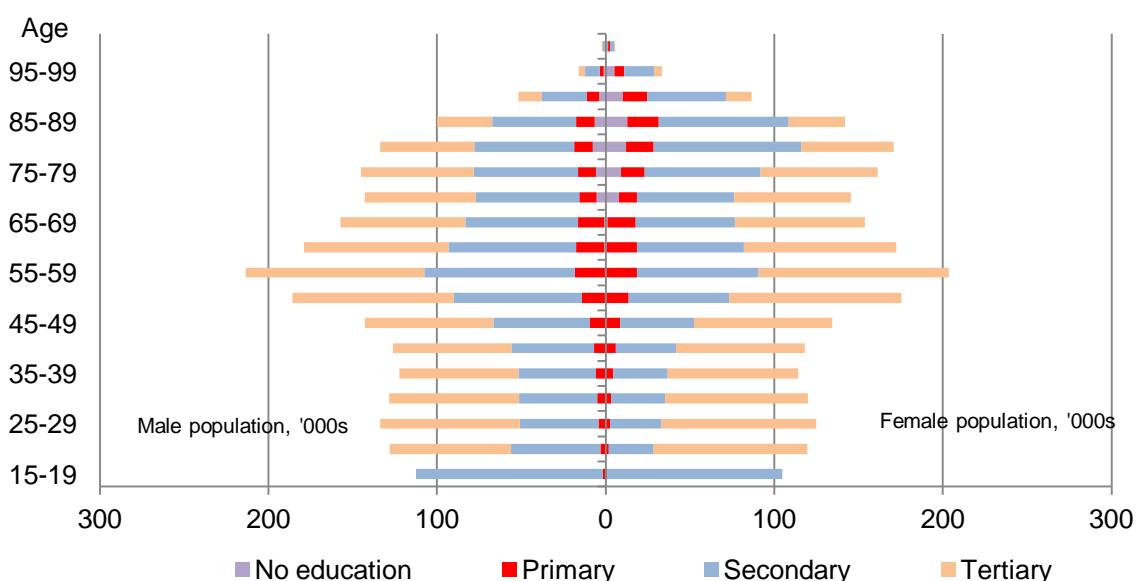
Ensuring the education system is able to support the continual development of Singaporean workers' fluid intelligence would also permit a better balance of capabilities (mental agility, problem-solving and experience) of the workforce across all ages in this period.)

³ *Singapore Workforce 2012*. Manpower Research and Statistics Department, Ministry of Manpower, November 2012.

The Shape of Things to Come

Looking further ahead however, the rapid expansion of education in Singapore from the 1970s onwards will result in a rather different population age profile by educational attainment. By 2050, according to the projections of Singapore's population by educational attainment, age and sex published by the IIASA World Population Program and Vienna Institute of Demography, there would only be 72,600 persons aged 55 to 64 with primary education or less, representing less than 2 per cent of the projected population at 15 years old and above. Furthermore, almost half of the population at 15 years and above would have received tertiary education.

Figure 2. Singapore population by sex, education and age (2050)



Source: Singapore data extracted from Projection of Populations by Level of Educational Attainment, Age and Sex for 120 Countries for 2005–2050, published by IIASA World Population Program and Vienna Institute of Demography

Coupled with the improvement in health outcomes that is associated with a more highly educated population, a flexible approach to the concept of retirement — by workers, employers and society at large — and advances in retirement adequacy, it may be possible to argue that a “golden age” of significant labour productivity gains (leading to growth in well-being per capita) is forthcoming when Singapore gets to this point, as suggested by Professor Lutz in his public lecture.

References

Prskawetz, A., B. Mahlberg, V. Skirbekk, I. Freund, M. Winkler-Dworak, T. Lindh, F. Andersson. 2006. *The Impact of Population Ageing on Innovation and Productivity Growth in Europe*. Vienna: Vienna Institute of Demography, Austrian Academy of Sciences,

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