

## **Population ageing trend of Hong Kong**

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### **Abstract**

With lower fertility and longer life expectancy, population ageing is a global issue, yet the pace of our population ageing will be more pronounced in the coming twenty years as compared to other developed economies such as Japan. This article analyses the salient characteristics of population ageing in Hong Kong. With reference to overseas experience, three possible mechanisms (shrinking labour supply, lower savings rates, and government expenditures tilted towards welfare and health) are discussed through which the ageing process might pose a drag on our potential economic growth.

<p>The views and analysis expressed in this article are those of the authors and do not necessarily represent the views of the Office of the Government Economist.</p>
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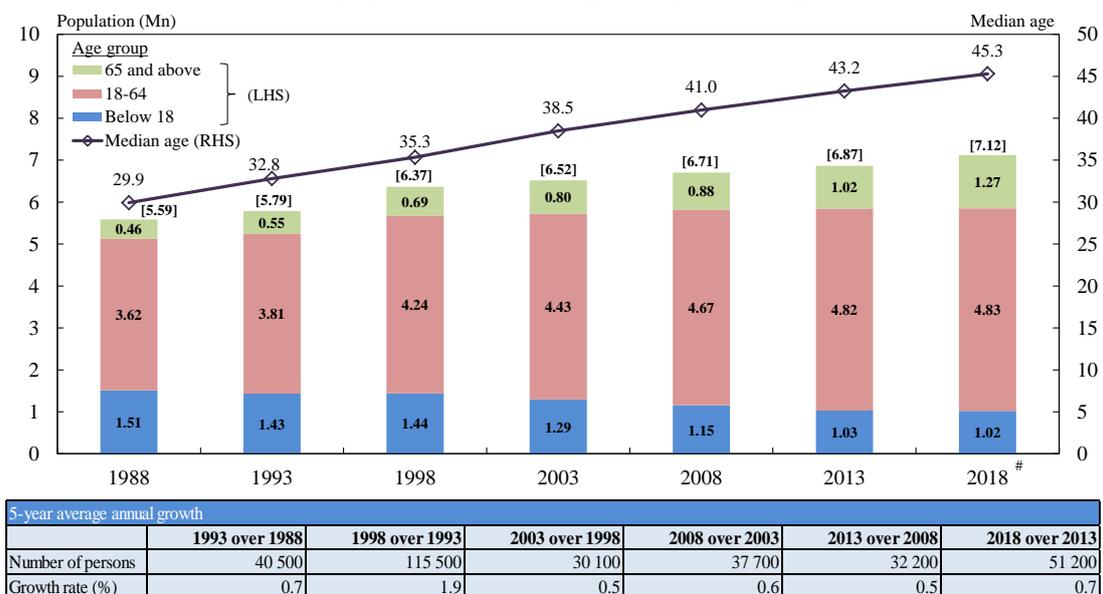
## I. INTRODUCTION

1. With lower fertility and longer life expectancy, population ageing is a global issue, yet our population will age at a faster pace in the coming two decades, with a speed even more pronounced than in other developed economies such as Japan. This article first discusses the salient characteristics of local population ageing as well as its main causes, coupled with a comparison to overseas economies. It then discusses the mechanisms through which the ageing process would have potential effects on economic growth with reference to the literature and overseas experience so as to shed light on its implications for Hong Kong.

## II. DEMOGRAPHIC TREND IN HONG KONG IN THE PAST 30 YEARS

2. From 1988 to 2018, Hong Kong's population<sup>1</sup> increased from 5.59 million to 7.12 million, with an average annual increase of 0.8% per annum. Over this period, the average annual growth rate of the local population was visibly higher between 1993 and 1998 (1.9%) as many people who had emigrated in early years returned to Hong Kong, and then the population growth remained steady at low level. Analysed by age, the size and share of the elderly (aged 65 and over) rose continuously from 0.46 million and 8.2% to 1.27 million and 17.9% respectively. The population of children (aged below 18) shrank from 1.51 million (or 27.0%) to 1.02 million (or 14.4%). The median age rose from 29.9 to 45.3 (*Chart 1*).

**Chart 1: Total population of Hong Kong and its growth, 1988-2018**



Notes: (#) Provisional figures.  
 [ ] Figures in square brackets denote the total population.  
 Mid-year population figures, excluding foreign domestic helpers.  
 Source: Demographic Statistics Section, Census and Statistics Department.

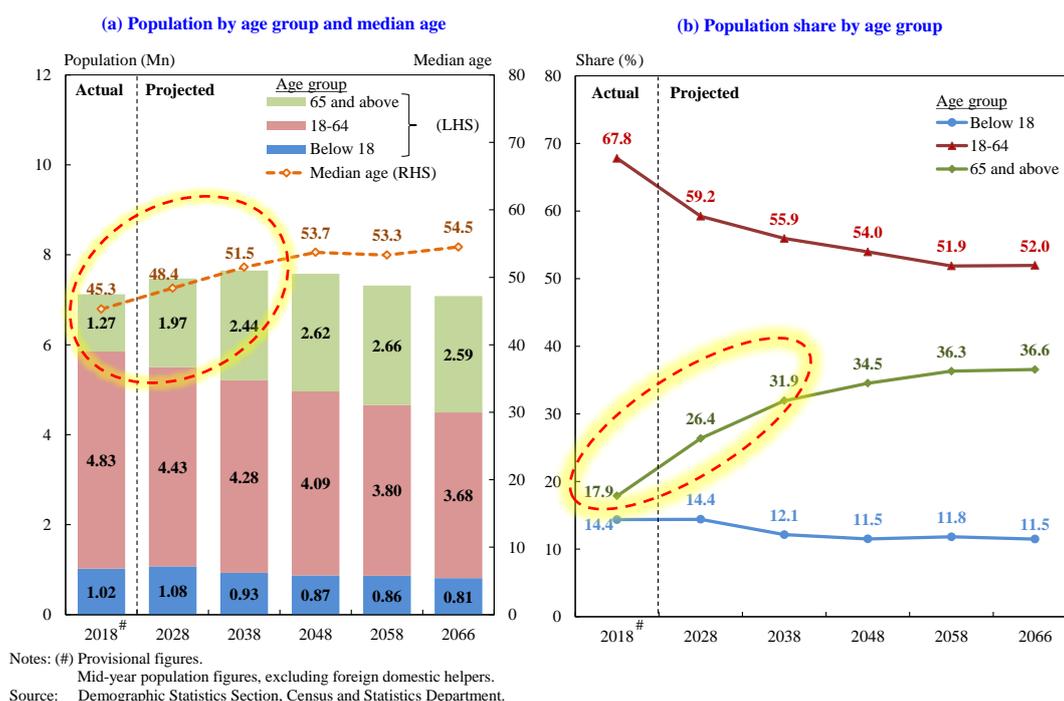
<sup>1</sup> Unless otherwise specified, all population-related figures exclude foreign domestic helpers.

### III. AGEING OF HONG KONG: AT PRESENT AND IN FUTURE

#### III.1 Ageing in Hong Kong

3. Based on the 2016-based population projections published by the Census and Statistics Department (C&SD), the pace of population ageing in Hong Kong will be ramping up in the coming 20 years or so. Between 2018 and 2038, the size and share of the elderly population will almost double from 1.27 million and 17.9% to 2.44 million and 31.9% respectively (*Chart 2*). In other words, nearly one in every three persons will be elders in 2038. Meanwhile, those aged 75 or above will increase even more noticeably from 0.57 million to 1.40 million (or from 7.9% to 18.3% of the total population). In contrast, the number and shares of persons aged 18-64 and children are expected to decrease. The ageing patterns will continue throughout the projection period (up to 2066), but its pace will decelerate somewhat after 2038.

**Chart 2: Total population of Hong Kong by age group, 2018-2066**



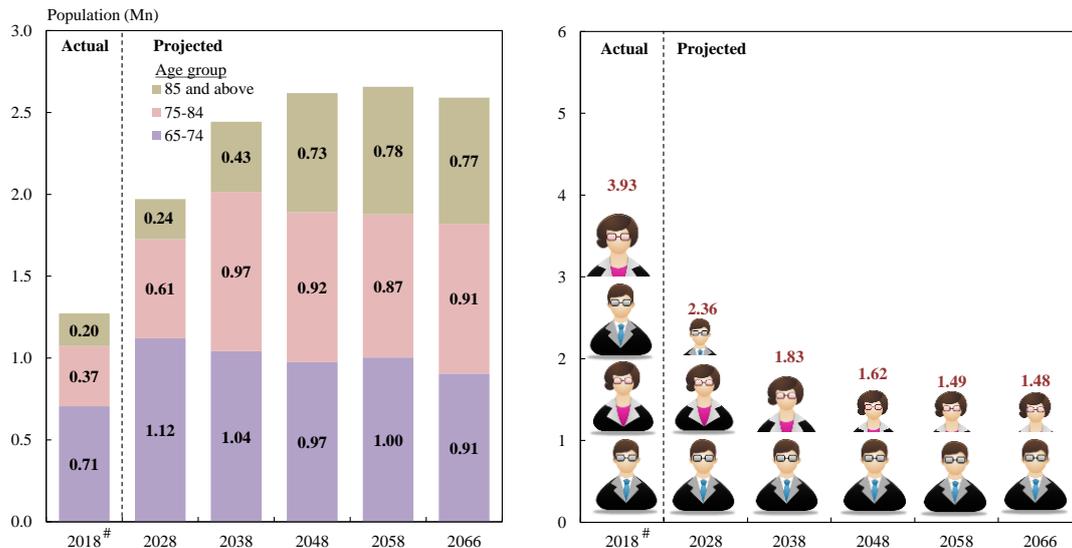
4. The elderly support ratio<sup>2</sup> will decrease drastically in tandem. At present, one elder is supported by nearly 4 persons (3.93) of working-age (15-64). Yet, this ratio will fall to 1.83 in 2038 and further to 1.48 in 2066, showing a heavier burden on future generations to support the elderly (*Chart 3*).

<sup>2</sup> Refers to the number of people aged 15–64 per elder aged 65 and above.

**Chart 3: Elderly population and elderly support ratio, 2018-2066**

(a) Elderly population by age group

(b) Elderly support ratio



Notes: (#) Provisional figures.  
 Elderly support ratio refers to the number of persons aged 15-64 per elder aged 65 and above.  
 Source: Demographic Statistics Section, Census and Statistics Department.

5. Such rapid ageing is mainly caused by our low fertility and high life expectancy. The local total fertility rate at 1.125 in 2017 is almost the lowest<sup>3</sup> in the world and far below the replacement level (2.100)<sup>4</sup>, partly because of the postponement of marriage and having fewer higher-order live births<sup>5</sup>. It is projected to stay around 1.200 in the next 50 years (*Chart 4*). Additionally, the expectation of life at birth for men and women of Hong Kong were 81.9 and 87.6 in 2017 respectively, among the highest in the world<sup>6</sup>. These figures are projected to rise further to 87.1 and 93.1 respectively in 2066.

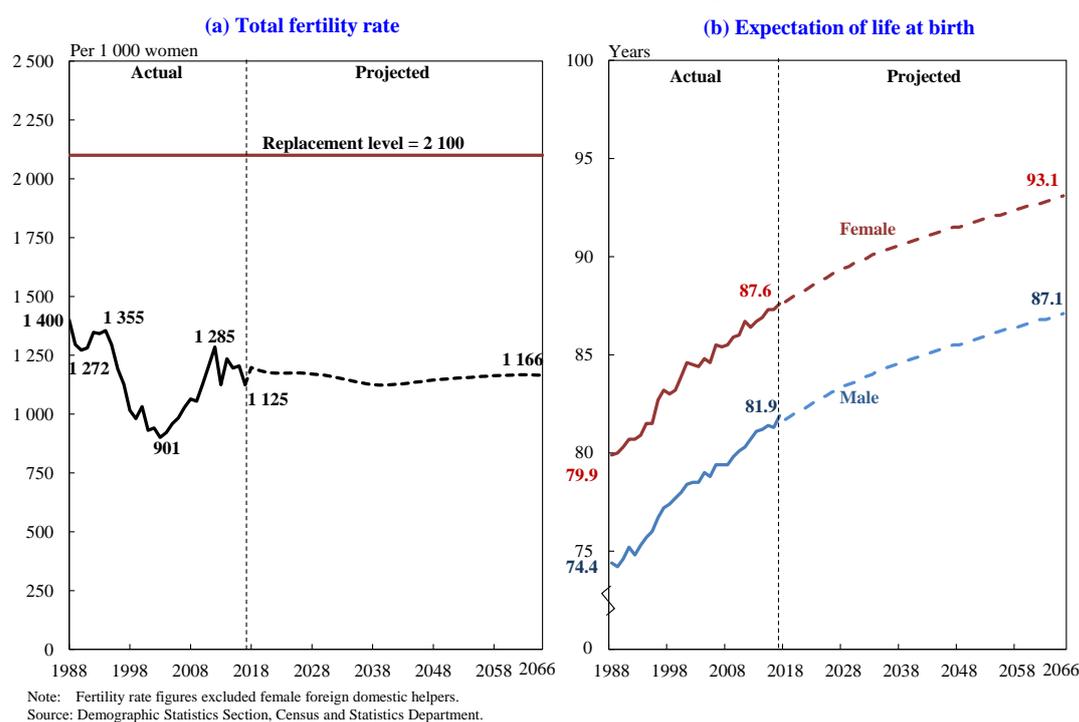
<sup>3</sup> Based on international databases including from the World Bank (<https://data.worldbank.org/indicator/SP.DYN.TFRT.IN/>) and the United Nations (<https://population.un.org/wpp/Download/Standard/Fertility/>).

<sup>4</sup> The number of births 1 000 women need to produce for a population to replace itself.

<sup>5</sup> In 2017, Hong Kong's median ages at first marriage for men and women were 31.4 and 29.6 respectively. Moreover, second order or higher live births were 54.0% of total live births in 1988, down to 47.8% in 2017.

<sup>6</sup> Based on international databases including from the World Bank (<https://data.worldbank.org/indicator/SP.DYN.LE00.IN/>) and the United Nations (<https://population.un.org/wpp/Download/Standard/Mortality/>).

**Chart 4: Total fertility rate and life expectancy at birth**



### III.2 Comparison of ageing in Hong Kong and selected economies

6. When compared to selected developed economies, Hong Kong's present stage of population ageing is similar to that in the UK, less serious than that in Japan and Italy, but slightly more serious than that in other selected economies in terms of the main ageing indicators shown in *Table 1*. Yet, the ageing of Hong Kong is expected to become more prominent than in the selected economies (except two high-income economies in Asia (South Korea and Taiwan)) given our lower fertility rate and higher life expectancy (*Chart 5*). Our age structure will catch up to that of Italy and be close to Japan's within the next 15 years - it will take 20 years for Hong Kong to double its share of elderly population from 15% (in 2013) to 30% (in 2033), even faster than the same transition in Japan (28 years from 1995 to 2023). In contrast, economies in Europe and America are also facing the challenge of population ageing but not to the same extent, with their share of elderly persons being projected to stay below 30% even 50 years later. Nonetheless, the ageing speed in Taiwan and South Korea would be at least as prominent as that in Hong Kong given that they would take 20 and 17 years respectively to double their share of elderly population based on their own official projections<sup>7</sup> (*Table 1* and *Table 2*).

<sup>7</sup> According to the official projections of Taiwan and South Korea, in addition to rather low fertility and long life expectancy as shown in *Chart 5*, the extent of net migration to total population in these two economies is estimated to be less than that of Hong Kong.

**Table 1: Key ageing indicators of Hong Kong and selected economies**

	Share of elderly in the population			Elderly support ratio			Median age of the population		
	2018 (actual)	(projected)		2018 (actual)	(projected)		2018 (actual)	(projected)	
		2038	2066		2038	2066		2038	2066
<b>Hong Kong</b>	<b>17.9<sup>&amp;</sup></b>	<b>31.9</b>	<b>36.6</b>	<b>3.93<sup>&amp;</sup></b>	<b>1.83</b>	<b>1.48</b>	<b>45.3<sup>&amp;</sup></b>	<b>51.5</b>	<b>54.5</b>
<b>Japan</b>	28.0	<b>34.4</b>	38.4 <sup>**</sup>	2.13	<b>1.60</b>	1.34 <sup>**</sup>	46.3 <sup>^</sup>	-	-
South Korea	14.2 <sup>@</sup>	31.3	42.5 <sup>**</sup>	5.11 <sup>@</sup>	1.84	1.13 <sup>**</sup>	42.4 <sup>@</sup>	52.3	58.7 <sup>**</sup>
Taiwan	14.4	29.0	41.2 <sup>**</sup>	5.04	2.09	1.21 <sup>**</sup>	41.4	51.7	57.8 <sup>**</sup>
Australia	15.4 <sup>@</sup>	18.9	20.9	4.27 <sup>@</sup>	3.34	2.96	37.3 <sup>@</sup>	39.1	40.7
Canada	16.9 <sup>@</sup>	24.0	25.6 <sup>§</sup>	3.98 <sup>@</sup>	2.52	2.30 <sup>§</sup>	40.6 <sup>@</sup>	43.9	44.2 <sup>§</sup>
<b>Italy</b>	22.4 <sup>^</sup>	<b>32.7</b>	32.7	2.86 <sup>^</sup>	<b>1.67</b>	1.65	45.9 <sup>^</sup>	<b>51.7*</b>	50.6 <sup>**</sup>
UK	18.2 <sup>@</sup>	24.2	26.5	3.52 <sup>@</sup>	2.46	2.17	40.1 <sup>@</sup>	43.3	44.5
US	14.6 <sup>^</sup>	21.5	24.5	4.52 <sup>^</sup>	2.82	2.39	37.6 <sup>^</sup>	41.2*	42.9 <sup>**</sup>

Notes: (&) Provisional figures. (\*\*) Projections up to 2065. (\*) Projected figures in 2040.

(§) Projections up to 2063. (@) Only 2017 data are available. (^) Only 2015 data are available. Elderly support ratio refers to the number of people aged 15-64 per elder aged 65 and above.

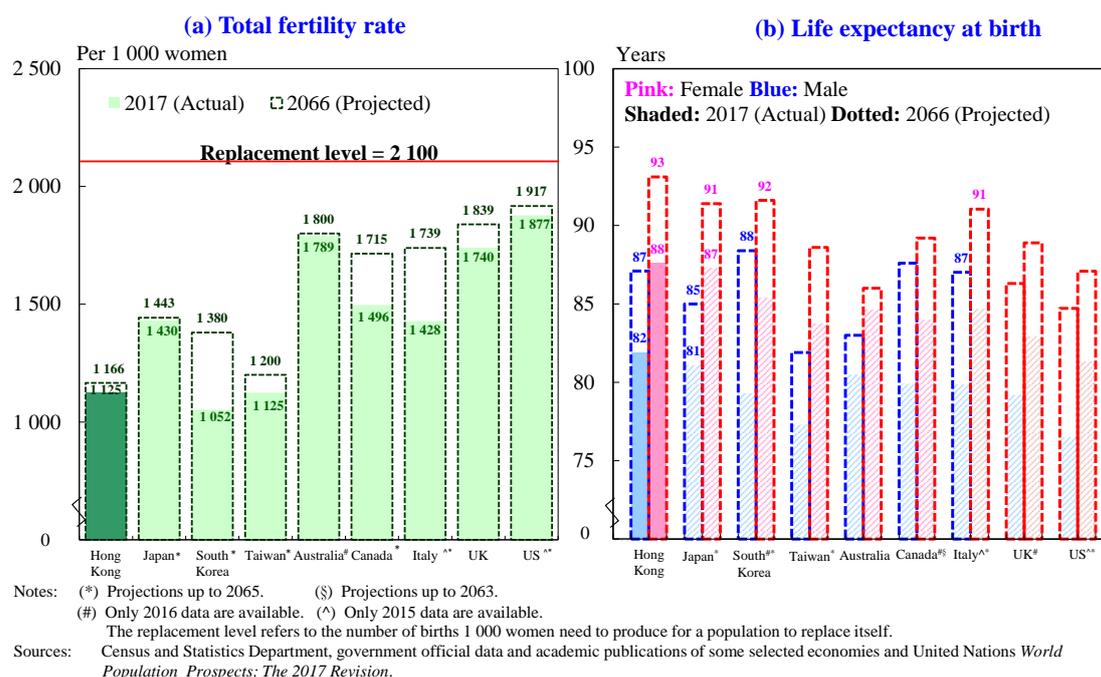
Sources: Census and Statistics Department, government official data and academic publications of some selected economies and United Nations *World Population Prospects: The 2017 Revision*.

**Table 2: Number of years for the share of elderly population to double to 30%**

	Change in the share of elderly population	No. of years from 15% to 30%
<b>Hong Kong</b>	<b>From 15% in 2013 to 30% in 2033</b>	<b>20</b>
Taiwan	From 15% in 2019 to 30% in 2039	20
South Korea	From 15% in 2019 to 30% in 2036	17
<b>Japan</b>	<b>From 15% in 1995 to 30% in 2023</b>	<b>28</b>
Italy	From 15% in 1990 to 30% in 2032	42
Australia	From 15% in 2014 to <b>21%</b> in 2066	>50
UK	From 15% in 1977 to <b>26%</b> in 2066	>50
Canada	From 15% in 2012 to <b>26%</b> in 2063	>50
US	From 15% in 2015 to <b>24%</b> in 2066	>50

Sources: Census and Statistics Department, government official data and academic publications of some selected economies and United Nations *World Population Prospects: The 2017 Revision*.

**Chart 5: Total fertility rate and life expectancy**



#### IV. REVIEW ON POSSIBLE IMPACTS OF POPULATION AGEING ON THE POTENTIAL OF ECONOMIC GROWTH

7. It is suggested by various studies that population ageing could affect economic growth through three major channels: (i) the quantity and quality of the labour force (LF); (ii) the saving pattern; and (iii) government expenditure on social welfare and health care<sup>8</sup>.

##### IV.1 Quantity and quality of the labour force

8. Since the elderly labour force participation rate (LFPR) is much lower than that of younger persons, labour supply would fall amidst a rising share of the elderly population. A simple decomposition of Gross Domestic Product (GDP) per capita can show further that population ageing ( $\downarrow \text{Pop}_{15-64} / \text{Pop}_{\text{total}}$ ) could **lower** GDP per capita given **unchanged** (i) labour productivity; and (ii) willingness of people to join the workforce (captured by  $\text{LF} / \text{Pop}_{15-64}$ ):

<sup>8</sup> Bloom, D. E., Canning, D., & Fink, G. (2010). Implications of population ageing for economic growth. *Oxford Review of Economic Policy*, 26(4), 583-612.

Nagarajan, N. R., Teixeira, A. A., & Silva, S. T. (2016). The impact of an ageing population on economic growth: an exploratory review of the main mechanisms. *Análise Social*, 51(218), 4-35.

$$\text{By definition, } \frac{GDP}{Pop_{total}} = \frac{GDP}{LF} \times \frac{LF}{Pop_{total}} \quad (1)$$

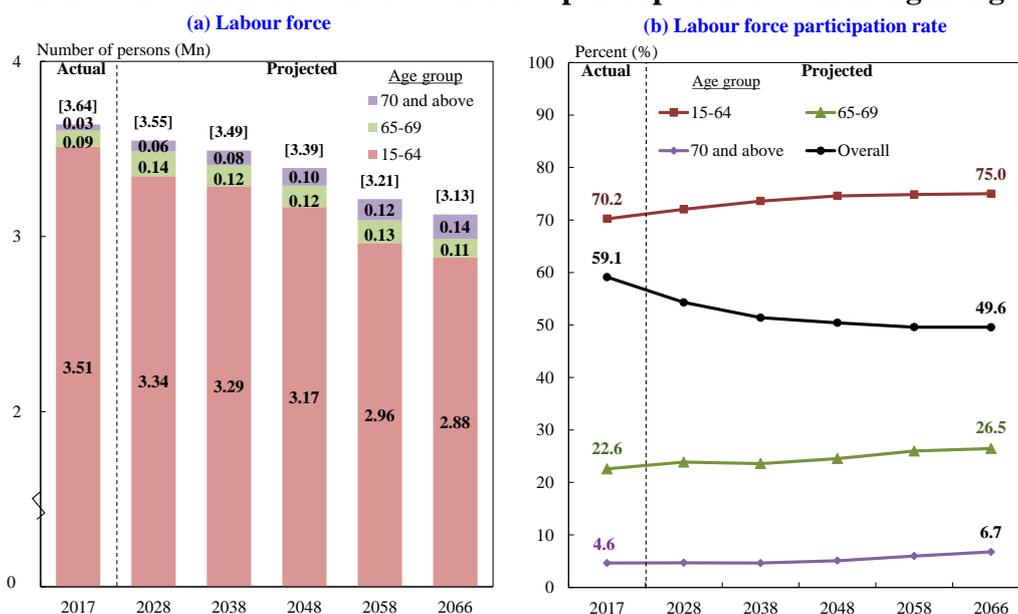
$\uparrow$   $\uparrow$   $\uparrow$   
*Per capita* *Labour* *Ratio of LF*  
*GDP* *productivity* *to total pop*

$$\frac{GDP}{Pop_{total}} = \frac{GDP}{LF} \times \frac{LF}{Pop_{15-64}} \times \frac{Pop_{15-64}}{Pop_{total}} \quad (2)$$

$\uparrow$   $\uparrow$   $\uparrow$   $\uparrow$   
*Per capita* *Labour* *Ratio of LF* *Demographic*  
*GDP* *productivity* *to Pop aged* *effect*  
*15-64*

9. Many ageing economies expect to see a decline in labour force participation<sup>9</sup>. A recent report released by the European Commission in 2018<sup>10</sup> projects that the total labour force (aged 20 to 64) in the EU is projected to fall by 9.6% between 2016 and 2070. Similarly, according to the 2016-based labour force projections by C&SD, the total labour force of Hong Kong is projected to plateau in 2019 to 2022 and then dwindle despite an anticipated rising elderly LFPR. The overall LFPR is likewise projected to decrease from 59.1% to 49.6% between 2017 and 2066 (*Chart 6*).

**Chart 6: Labour force and labour force participation rate in Hong Kong**



Notes: Excluding foreign domestic helpers.  
 [ ] Figures in square brackets denote the total labour force.  
 Sources: General Household Survey; Hong Kong labour force projections (2016-based), Census and Statistics Department.

<sup>9</sup> A projection made by the International Labour Organisation (ILO) indicates that the overall labour force participation rates of many developed economies will decline up to 2030. Bourmpoula, E., Gomis, R., & Kapso, S. (2017). ILO labour force estimates and projections: 1990-2030 (2017 edition). *ILO Geneva*. Retrieved from <https://www.ilo.org/ilostat-files/Documents/LFEP2017brief.pdf>

<sup>10</sup> European Commission. (2018, May). *The 2018 Ageing Report: Economic & Budgetary Projections for the 28 EU Member States (2016-2070)* (European Economy Institutional Papers 079). Retrieved from [https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070\\_en](https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en)

10. Over the past 30 years, the Hong Kong economy grew by an average of 3.8% per annum in real terms, of which 1.2 percentage points were contributed by the growth of the labour force, while the remaining 2.6 percentage points were contributed by the growth in productivity. Thus, higher productivity (due to higher quality of labour, improvement in technology, etc.)<sup>11</sup> could compensate for the shrinking labour force. Some studies<sup>12</sup> suggest that productivity tends to be related to the age profile of employees. Theoretically, productivity of workers may be lower at older ages for heavy manual work or for work tasks where learning and speed are required. But on the other hand, productivity may be enhanced or maintained at older ages in jobs where related job experience is crucial.

11. Empirical evidence is likewise found to be ambiguous. For instance, Mahlberg *et al.* (2013)<sup>13</sup> studied Austrian firms for the period between 2002 and 2005 and found mixed results as the productivity of older employees was lower in manufacturing and financial intermediation, but higher in such industries as wholesale and retail trade, as well as real estate, renting and business activities. On the other hand, Göbel and Zwick (2012)<sup>14</sup> studied the impact of changes in the age structure of employees on the output levels of establishments in metalworking, manufacturing and services sectors in Germany between 1997 and 2005, and found no significant results. Furthermore, using Dutch manufacturing data over the period of 2000-2005, Van Ours and Stoeldraijer (2011)<sup>15</sup> found no significant negative relationship between productivity and older workers aged 50 and above. In view of mixed empirical evidence, Nagarajan *et al.* (2016)<sup>16</sup> reckoned that whether workers become less productive as they age would differ across sectors and countries.

#### IV.2 Saving pattern

12. Population ageing is likely to affect individuals' saving behaviour as well. According to the life cycle hypothesis, individuals seek to smooth consumption over

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<sup>11</sup> Economic Analysis and Business Facilitation Unit, the Government of the Hong Kong Special Administrative Region (2016, May). *Box 1.3: Labour productivity growth in Hong Kong: a structural perspective*. Retrieved from <https://www.hkeconomy.gov.hk/en/pdf/box-16q1-1-3.pdf>

<sup>12</sup> Skirbekk, V. (2004). Age and individual productivity: A literature survey. *Vienna Yearbook of Population Research*, 2, 133-153.

<sup>13</sup> Mahlberg, B., Freund, I., Cuaresma, J. C., & Prskawetz, A. (2013). The age-productivity pattern: Do location and sector affiliation matter? *The Journal of the Economics of Ageing*, 1, 72-82.

<sup>14</sup> Göbel, C., & Zwick, T. (2012). Age and productivity: sector differences. *De Economist*, 160(1), 35-57.

<sup>15</sup> Van Ours, J. C., & Stoeldraijer, L. (2011). Age, wage and productivity in Dutch manufacturing. *De Economist*, 159(2), 113-137.

<sup>16</sup> Nagarajan, N. R., Teixeira, A. A., & Silva, S. T. (2016). The impact of an ageing population on economic growth: an exploratory review of the main mechanisms. *Análise Social*, 51(218), 4-35.

the course of a lifetime and hence young people tend to save more during their working life and draw down their savings upon retirement. This implies that an economy with a higher proportion of working-age population would have a higher private savings rate, the latter being conducive to economic growth via capital accumulation<sup>17</sup>.

13. In Hong Kong, since the difference between household income and expenditure based on data from Household Expenditure Survey (HES) conducted by C&SD could be regarded as a crude measure of household savings, the average savings ratio<sup>18</sup> and median savings ratio<sup>19</sup> of different types of households based on the latest 2014/15 HES are estimated to shed some light on household saving behaviour in Hong Kong. The statistics suggest that elderly households<sup>20</sup> and economically inactive<sup>21</sup> households tend to save less as compared with working households<sup>22 23</sup>. Conceivably, most members of elderly households lack employment earnings and therefore have to draw down their savings to finance their daily expenditure.

14. It is noteworthy that the savings of an economy as a whole consist of both private savings (savings of individuals/households and businesses) and public savings (i.e. the government receipts (e.g. tax revenue) less government outlays). Following the World Bank's definition, the national savings rate could be proxied by the ratio of aggregate savings to GDP (the gross savings rate), with the numerator being (Gross National Income plus net transfers<sup>24</sup> – Government expenditure – Consumption

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<sup>17</sup> Aghion, P., Comin, D., & Howitt, P. (2006). *When does domestic saving matter for economic growth?* (NBER Working Paper No. 12275). Retrieved from <https://www.nber.org/papers/w12275.pdf>

Alguacil, M., Cuadros, A., & Orts, V. (2004). Does saving really matter for growth? Mexico (1970–2000). *Journal of International Development*, 16(2), 281-290.

Bebczuk, R. (2000). Productivity and saving channels of economic growth as latent variables: an application of confirmatory factor analysis. *Estudios de economía*, 27(2), 243-257.

<sup>18</sup> (Average household income - average household expenditure) / average household income, where the averages are calculated over all the households in the group indicated before taking the ratio in order to avoid distortions due to households with zero or very low household income.

<sup>19</sup> Median savings ratio refers to the median of all household savings ratios. A household's savings ratio = (household income - household expenditure) / household income.

<sup>20</sup> Households with all members aged 65 or over, excluding domestic helpers.

<sup>21</sup> Households with all members being economically inactive, excluding domestic helpers.

<sup>22</sup> Households with at least one working member, excluding domestic helpers.

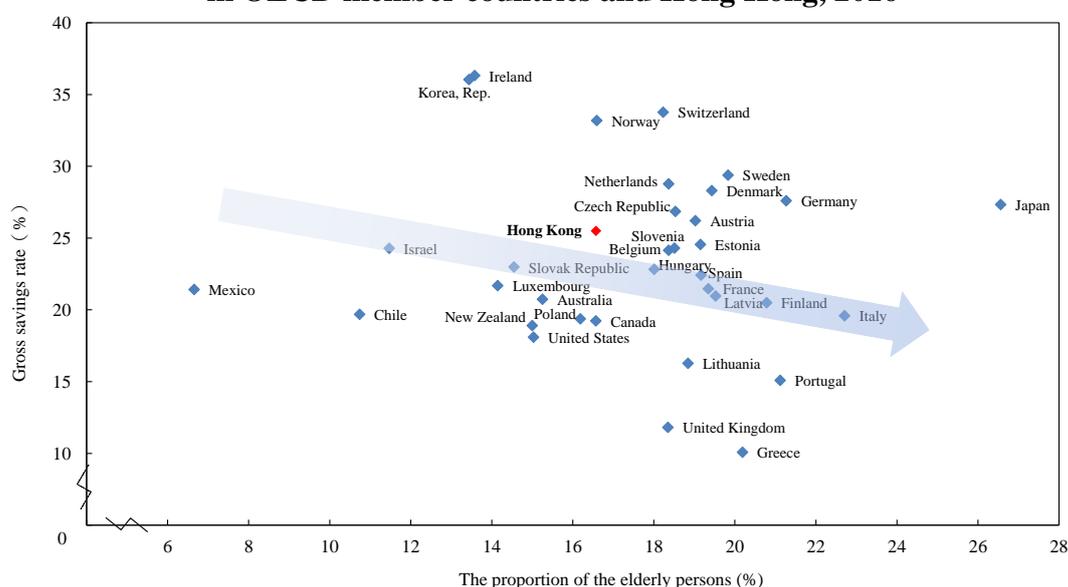
<sup>23</sup> The average savings ratio and median savings ratio were 39.1% and 35.4% respectively for working households, 14.2% and 7.9% respectively for elderly households, and 3.0% and 1.7% respectively for economically inactive households.

<sup>24</sup> Refers to net current transfers from abroad, which is the difference between the unrequited transfers of income from nonresidents to residents and those from residents to nonresidents. Current transfers include transfers of income between residents of an economy and the rest of the World that carry no provisions for repayment.

expenditure). A fairly negative relationship between the gross savings rate and the share of the elderly population was seen among member countries of the Organisation for Economic Co-operation and Development (OECD) in 2016 (*Chart 7*).

15. In fact, apart from demographic factors, national savings is also affected by various factors, such as economic factors (e.g. income, labour market and asset market conditions, real interest rates) and different types of government policies (e.g., the social security system, retirement protection, taxation, fiscal policy)<sup>25</sup>. This may explain why the gross savings rate of some economies with older populations like Japan and Italy were higher than that of other economies such as the UK, as shown in *Chart 7*.

**Chart 7: Gross savings rates and the proportion of the elderly persons in OECD member countries and Hong Kong, 2016**



Sources: World bank database, and Demographic Statistics Section, Census and Statistics Department.

16. Making reference to quantitative analyses based on international data, some empirical findings, such as by Modigliani and Sterling (1983)<sup>26</sup>, indicate a negative effect of population ageing on the private and/or national savings rate based on data from OECD countries, while controlling for other relevant factors. For instance, using World Bank database of 98 countries spanning the years 1965-1994, Loayza *et*

<sup>25</sup> Loayza, N., Schmidt-Hebbel, K., & Servén, L. (2000). What drives private saving across the world? *Review of Economics and Statistics*, 82(2), 165-181.

Masson, P. R., Bayoumi, T., & Samiei, H. (1998). International evidence on the determinants of private saving. *The World Bank Economic Review*, 12(3), 483-501.

<sup>26</sup> Modigliani, F., & Sterling, A. (1983). Determinants of private saving with special reference to the role of social security—cross-country tests. In *The determinants of national saving and wealth* (pp. 24-55). Palgrave Macmillan, London.

al. (2000)<sup>27</sup> estimated that an increase of one percentage point in the elderly dependency ratio<sup>28</sup> would lead to a decrease of 0.77 percentage point in the national savings rate on average<sup>29</sup>. In view of the above, the on-going population ageing trend in Hong Kong may exert some downward pressure on its savings rate in the long run.

#### IV.3 Increase in public expenditure on welfare and health

17. There have been views that population ageing will lead to an increase in government spending on welfare and health<sup>30</sup>. *The 2018 Ageing Report* published by the European Commission suggests that population ageing will bring about an increase in government expenditure in the EU in the next two decades, mainly driven by expenditures on long-term care and health care<sup>31</sup>. Spending on education and infrastructure may be compromised, thereby hindering economic development. Yet, the empirical estimates of these effects are limited, with the relevant studies in support of this proposition mainly based on simulation results<sup>32</sup>.

18. Hong Kong's recurrent government expenditure on social welfare and health is estimated to be \$151.0 billion in 2018/19, which accounts for 37.1% of total estimated recurrent government expenditure. Compared with 1998/99, recurrent expenditure in these two areas has registered a cumulative increase of 181% (from \$53.7 billion to \$151.0 billion). As revealed in **Chart 8**, in the face of population ageing, it is expected that Hong Kong's government expenditure in these areas would increase visibly in the years to come.

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<sup>27</sup> Loayza, N., Schmidt-Hebbel, K., & Servén, L. (2000). What drives private saving across the world? *Review of Economics and Statistics*, 82(2), 165-181.

<sup>28</sup> The number of persons aged 65 and over per 100 persons aged between 15 and 64.

<sup>29</sup> The study also found significant influence of other factors (e.g. income growth, terms of trade) on national savings rate.

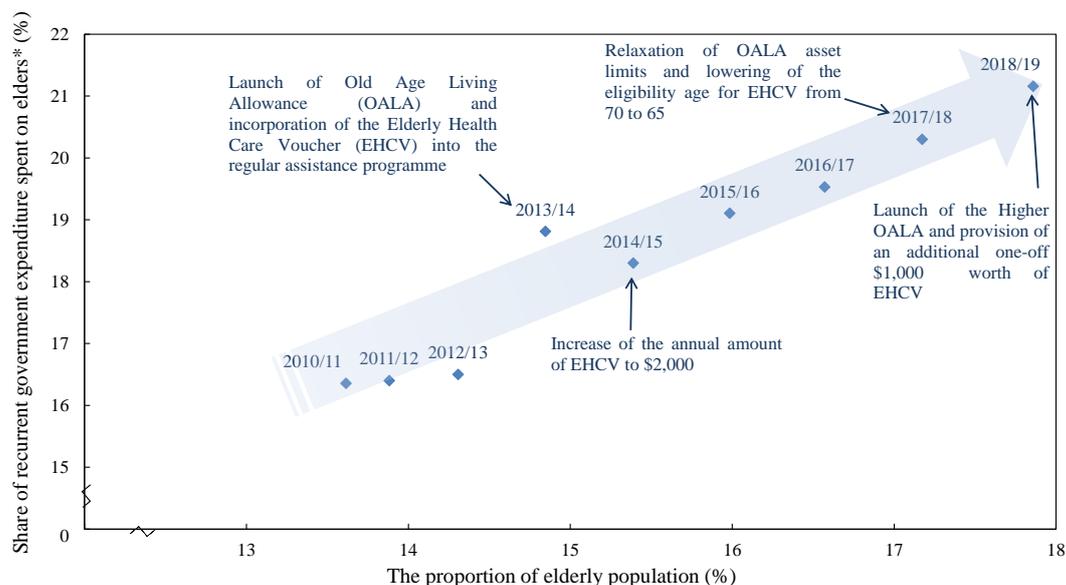
<sup>30</sup> Thiébaud, S. P., Barnay, T., & Ventelou, B. (2013). Ageing, chronic conditions and the evolution of future drugs expenditure: A five-year micro-simulation from 2004 to 2029. *Applied Economics*, 45(13), 1663-1672.

<sup>31</sup> The total government spending on ageing-related areas (including pensions, health care, long-term care, education and unemployment benefits) was 25% of GDP in 2016 in the EU and is projected to rise by 1.7 percentage points of GDP in the period to 2070 in the EU.

<sup>32</sup> Gonzalez-Eiras, M., & Niepelt, D. (2012). Ageing, government budgets, retirement, and growth. *European Economic Review*, 56(1), 97-115.

Kudrna, G., Tran, C., & Woodland, A. (2015). The dynamic fiscal effects of demographic shift: The case of Australia. *Economic Modelling*, 50, 105-122.

**Chart 8: The proportions of elderly population and recurrent government expenditure spent on elders\* in Hong Kong**



Notes: (\*) Including social welfare services, medical services and other support services.

Population figures exclude foreign domestic helpers.

Sources: Demographic Statistics Section, Census and Statistics Department; Financial Services and the Treasury Bureau; speech by the Chief Secretary for Administration and the Secretary for Labour and Welfare (various years).

19. In sum, some studies tend to support the notion that population ageing would pose a drag on long-term economic growth through different channels. Nonetheless, Bloom *et al.* (2010)<sup>33</sup> raises an interesting point that projections without taking into account behavioural responses to changing age structures and life expectancies are likely to overestimate the impact of population ageing because individual behaviour will adjust to cope with the situation<sup>34</sup>. For instance, people without children would tend to save more before retirement, and more mature persons with better education and health would be inclined to work longer by deferring their retirement or re-entering the labour market.

<sup>33</sup> Bloom, D. E., Canning, D., & Fink, G. (2010). Implications of population ageing for economic growth. *Oxford Review of Economic Policy*, 26(4), 583-612.

<sup>34</sup> For example, a study in 1999 built up an overlapping generation model with endogenous growth incorporated through accumulation of physical and human capital (such as higher educational attainment). The results suggest that population ageing could induce future generations with higher human capital, as their parents would be willing to invest more on their children, which would help to stimulate economic growth.

Fougère, M., & Mérette, M. (1999). Population ageing and economic growth in seven OECD countries. *Economic Modelling*, 16(3), 411-427.

## **V. CONCLUDING REMARKS**

20. Hong Kong's population ageing will speed up in the coming 20 years, at a more pronounced and faster pace than most developed economies, mainly due to lower fertility and longer life expectancies. Given the plausible economic challenges brought about by population ageing as analysed in this letter, the HKSAR Government has conducted / plans to deliver various measures to cope with the challenges and opportunities from an ageing population.

21. For instance, the Chief Executive, in her 2018 Policy Address, unveiled a basket of initiatives and allocated substantial resources to education with a view to nurturing quality future generations for Hong Kong's sustainable economic development. To attract a pool of overseas talent, the Human Resources Planning Commission has been established to explore and co-ordinate policies and measures on human resources in a holistic manner. These measures are targeted at increasing the productivity and size of the working population. Nevertheless, population ageing and population policies straddle multi-faceted areas. Apart from the Government, individuals, families, the community and the business sector all have the responsibility to devote efforts to tackle the challenges ahead.