

**Research Assessment Exercise 2020**  
**Impact Case Study**

**University: The Chinese University of Hong Kong**  
**Unit of Assessment (UoA): 21 Economics & Finance**

**Title of case study: Population Ageing in Hong Kong: Implications for Planning Health Services and Financing Retirement Security**

**(1) Summary of the impact** (indicative maximum 100 words)

The ageing of populations is a common problem for many countries around the world. Hong Kong is no exception. After the change of sovereignty in 1997, there was the potential for changes in policy and for reforms of health care and social security programmes. What might retirement mean in the coming years? What might retirement benefits look like? How can Hong Kong finance the health care costs for elderly people? Research by Professor Wai Sum Chan at The Chinese University of Hong Kong has provided impactful influence to the formation of government policy. He has been presenting his research to the senior government units, such as the Commission on Poverty, the Food and Health Bureau, the Elderly Commission, the Central Policy Unit, the Legislative Council and the general public. Professor Chan was invited to describe his research findings and suggestions on policy direction in various media outlets in Hong Kong (such as RTHK).

**(2) Underpinning research** (indicative maximum 500 words)

The twentieth century witnessed an unprecedented extension of human longevity around the world. However, the prospects of longer lives have led to concern over their implications for social, financial, health care and retirement systems. With one of the world's longest life expectancies (87.6 for women, 81.9 for men in 2017), Hong Kong is now ageing faster than many other countries. Centenarians (people living to 100 and beyond) represent one of the fastest growing age groups in the Hong Kong population. Currently, there are around 3,700 centenarians in Hong Kong. Based on demographic, economic, social security and health data, Wai Sum's research at CUHK from 1 January 2000 to 30 September 2019 models scenarios for the short and medium range regarding the effects of longevity on health, disabilities, retirement security, and demand for medical services, long-term care and other related matters in Hong Kong. The resulting body of work considers measures to address these challenges.

***Retirement Income Protection*** -- Historically, the Hong Kong government has taken a laissez-faire attitude to the protection of retirement. For example, the provision of pension plans has been left solely to the private sector. The Mandatory Provident Fund (MPF) system was implemented in December 2000. It can be described as a saving system that is employment-based, contribution-defined, privately managed and compulsory. However, the MPF scheme cannot provide adequate financial protection for older workers and low-income earners. Voluntary schemes, such as reverse mortgages, annuities and private retirement savings, have not been popular in Hong Kong. The research [R1, R2 and R5] studied the causes of this phenomenon and provided recommendations for policymakers.

***Healthcare Financing*** -- Since the late 1990s, financing health care for the ageing population in Hong Kong has surfaced as a critical issue. As the health needs of the ageing population are expected to intensify the demand and expenditure for health care, it becomes necessary to derive long term plans for appropriate and cost-effective services. The research [R4] estimated the usage of monthly

health services by elderly people in Hong Kong. Factoring the dynamics of an ageing population, [R3] derived actuarial projection estimates of Hong Kong's total domestic health expenditures to the year 2033. This was one of the first actuarial models to generate long-range scenarios for health care expenditures in Hong Kong. The model has been used by the Hong Kong government for planning various health services projects.

**Long-Term Care --** The Hong Kong government has been shouldering most of the long-term care (LTC) expenditures for its residents. Given the problems arising from the ageing population, the financial sustainability of the current system of LTC financing and the need for a new arrangement are matters of serious concern for the government and the community. There is a lack of large-scale longitudinal long-term care studies in Hong Kong. This research [R6] used data from the US National Long-Term Care Surveys (NLTCs), with calibrations to Hong Kong's vital statistics and a Markov Chain model, to project an individual's (age-gender specific) future LTC expenditures in Hong Kong. The research used a simple private insurance scheme to illustrate the actuarial calculations. The results are useful for funding and administering LTC services in Hong Kong.

### **(3) References to the research** (indicative maximum of six references)

R1. Lee, S.Y., Chou, K.L. and van Kippersluis, H. and Chan, W.S., 'Consumer Preferences and Demand for Annuities: Evidence From Hong Kong', *Journal of Aging and Social Policy (Impact Factor: 1.512)*, 2019, 31, 170-188.

R2. Yu, K.M., Chou, K.L., Chan, W.S., Wu, A.M., Zhu, A.Y.F. and Lou, V.W.Q., 'Perceived Retirement Savings Adequacy in Hong Kong: An Interdisciplinary Financial Planning Model', *Ageing & Society (Impact Factor: 1.386)*, 2015, 35, 1565-1586.

R3. Leung, G.M., Tin, K.Y.K. and Chan, W.S., 'Hong Kong's Health Spending Projections through 2033,' *Health Policy (Impact Factor: 2.119)*, 2007, 81, 93-101.

R4. Leung, G.M., Wong, I.O.L., Chan, W.S., Choi, S. and Lo, S.V., 'The Ecology of Health Care in Hong Kong', *Social Science and Medicine (Impact Factor: 2.797)*, 2005, 61, 577-590.

R5. Hui, M.Y.Y. and Chan, W.S., 'A Search for the Root Causes of the Underdevelopment of the Hong Kong Annuity Market', *The Geneva Papers on Risk and Insurance (Impact Factor: 0.303)*, 2004, 29(3), 440-454.

R6. Chan, W.S., Li, S.H. and Fong, P.W., 'An Actuarial Analysis of Long-Term Care Demand in Hong Kong', *Geriatrics and Gerontology International (Impact Factor: 2.351)*, 2004, 4, S143-145

### **(4) Details of the impact** (indicative maximum 750 words)

Wai Sum's research has had a significant influence on the Hong Kong government's long-term planning for its ageing population. Specifically, his work has affected the development of policy and financial programmes for the Hong Kong elderly. By providing stakeholders with fundamental academic research, Wai Sum has accomplished the following:

#### **(a) led to the development of Reverse Mortgage Programmes in Hong Kong**

Wai Sum's research [R5] on retirement income protection discussed the possible challenges for reverse mortgage schemes in Hong Kong. At the time of his research, there were no reverse mortgage products in Hong Kong, and the concept was new to policymakers. Wai Sum's research came to the

attention of the Elderly Commission (EC), which was established in 1997 with the main task of providing advice to the Government of the HKSAR in the formulation of a comprehensive elderly care policy. Wai Sum was commissioned by the EC to investigate the international experience of, and market potential for, reverse mortgage products in Hong Kong. The report [S1] was submitted to the EC and forwarded to various government units for discussion. Because residential property prices in Hong Kong have been skyrocketing since 1960, agreement emerged that reverse mortgages could be important financial products for future retired homeowners. In particular, in paragraph 4.33 of [S1], Wai Sum recommended that *‘The Hong Kong Mortgage Corporation Limited (HKMC), which has already been operating a forward mortgage insurance programme in Hong Kong, might be a suitable agency to provide reverse mortgage insurance to lenders.’* Following that recommendation, the HKMC (which is wholly owned by the HKSAR Government) formally launched the reverse mortgage programme. He was invited to explain the mechanism of reverse mortgage to the general public in a government TV programme; see [S2]. **As of 31 August 2019, there are 3,485 reverse mortgages in force (a tremendous growth from 472 cases in 1 October 2013), and average monthly payout is at HK\$15,600.**

*(b) prompted the government to offer public annuities*

Over the past 18 years, the reform of the retirement protection system in Hong Kong has fuelled considerable debates in the community. In 2013, the government commissioned an academic team to study the future development of retirement protection in Hong Kong. Wai Sum was a member of the team and prepared various actuarial projections based on his research [S3]. The report indicated that the annuity market in Hong Kong was significantly underdeveloped, which echoed the findings in Wai Sum’s research paper [R5]. The Central Policy Unit (whose major function is to provide advice and recommendations on public policy and other matters to the HKSAR Government) commissioned Wai Sum and his team in 2016 to recommend a method to increase the demand for annuities in Hong Kong. The results were reported in [S4] and [R1]. In April 2018, the HKMC official launched the life annuity scheme and named the scheme “HKMC Annuity Plan” [S5] following some features stated in [S4, R5]. **As of 12 December 2018, 5,500 subscribers of the HKMC annuity plan have completed the application procedures with an average single premium at HK\$506,000.**

*(c) provided an actuarial model for projecting health care usage and expenditure that could be widely replicated and extended*

In Hong Kong, longevity and improved health have enriched citizens’ lives, but an ageing population has also led to a heavier burden on healthcare. With a growing elderly population and a shrinking proportion of young people, the increasing burden of financing healthcare for the community falls on the shoulders of fewer people. In the early 2000s, the government began to express concerns about the sustainability of the Hong Kong healthcare financing system. The government’s Food and Health Bureau commissioned Wai Sum and his team to perform projections on public and private health expenditures in Hong Kong up to year 2033. The proposed methodology and key results were published in a peer-reviewed academic journal [R3]. The report, which contained details of the projections, formed an important component of the healthcare reform consultation exercise launched by the government [S6, S9]. In 2012, Wai Sum was invited to join the Working Group on Health Protection Scheme organised by the Food and Health Bureau. The Group provided views and suggestions to the government concerning implementation of the scheme in Hong Kong [S7]. Wai Sum has been asked to comment on the effect of an ageing population on healthcare expenditures to various government units, influential bodies (including a public hearing conducted by the Legislative Council of the HKSAR Government [S8]) and prominent individuals.

***(d) provided the basis for private insurance companies to design long-term care benefits in Hong Kong***

Concomitant with population aging is the increasing burden of disease and disability, resulting in increasing demand for long-term care (LTC). Currently, there is no formal funding method for LTC in Hong Kong. Most elderly people rely completely on the government assistance for their LTC expenditures. The sustainability of this financing method in Hong Kong is questionable. The research by Wai Sum in [R6] provided a basic model to design private LTC insurance products for the Hong Kong market. Recently, The Government's Policy Innovation and Co-ordination Office awarded more than HK\$1 million research grant to Wai Sum's team to further explore the demand of private LTC insurance in Hong Kong [S10].

**(5) Sources to corroborate the impact** (indicative maximum of 10 references)

- [S1] The Elderly Commission, HKSAR Government (2005). Overseas' Experience in Developing Reverse Mortgage for Retirement Protection. [http://www.elderlycommission.gov.hk/en/download/library/030430/e\\_mortgage\\_report.pdf](http://www.elderlycommission.gov.hk/en/download/library/030430/e_mortgage_report.pdf)
- [S2] "Longevity risk and reverse mortgage" aired on TVB Jade and RTHK31 at 7pm on 7 Jul 2015. <https://podcast.rthk.hk/podcast/item.php?pid=784&eid=56065&year=2015&lang=zh-CN>
- [S3] Chow, NWS, Chan, WS, Ho, KM, Wong, YC. (2014). A Study on Future Development of Retirement Protection in Hong Kong. <http://www.rp.gov.hk/en/resources.php>  
<http://www.legco.gov.hk/yr13-14/chinese/panels/ws/minutes/ws20131209.pdf>
- [S4] Chou, KL, Chan, WS, Inkmann, J, van Kippersluis, H, Lee, SY, Yan, J. (2016). How to Increase the Demand for Annuities in Hong Kong: A study of Middle-Aged Adults. LC No. CB(2)1301/15-16(02) <http://www.legco.gov.hk/yr15-16/english/panels/ws/papers/ws20160418cb2-1301-2-e.pdf>
- [S5] Hong Kong Monetary Authority (2018). HKMC to introduce Life Annuity Scheme. <https://www.hkma.gov.hk/eng/key-information/press-releases/2018/20180705-5.shtml>
- [S6] Food and Health Bureau, HKSAR Government (2008). Projection of Hong Kong's Healthcare Expenditure. [http://www.fhb.gov.hk/beStrong/files/consultation/projecthealthexp\\_eng.pdf](http://www.fhb.gov.hk/beStrong/files/consultation/projecthealthexp_eng.pdf)
- [S7] Legislative Council Panel on Health Services, HKSAR Government (2012). Consultative Group on Health Protection Scheme. <http://www.legco.gov.hk/yr11-12/english/panels/hs/papers/hs0213cb2-1200-2-e.pdf>
- [S8] Legislative Council Panel on Health Services, HKSAR Government (2010). Invited Comments on the Healthcare Reform Second Stage Consultation Document (in Chinese). <http://www.legco.gov.hk/yr10-11/chinese/panels/hs/papers/hs1211cb2-631-7-c.pdf>
- [S9] Legislative Council Panel on Health Services, HKSAR Government (2014). Strategic Review on Healthcare Manpower Planning and Professional Development. LC Paper No. CB(2)1283/13-14(01) [http://www.legco.gov.hk/yr13-14/english/panels/hs/hs\\_hps/papers/hs\\_hps0415cb2-1283-1-e.pdf](http://www.legco.gov.hk/yr13-14/english/panels/hs/hs_hps/papers/hs_hps0415cb2-1283-1-e.pdf)
- [S10] "How to Increase the Demand for Private Long-term Care Insurance in Hong Kong?" [https://www.pico.gov.hk/doc/en/prfs/List\\_of\\_Granted\\_Projects\\_2018\\_19\\_Second\\_Round\\_en.pdf](https://www.pico.gov.hk/doc/en/prfs/List_of_Granted_Projects_2018_19_Second_Round_en.pdf)