



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

COLLEGE OF PROFESSIONAL AND
CONTINUING EDUCATION
專業及持續教育學院

CPCE Health Conference 2020

AGEING WITH HEALTH AND DIGNITY
Implications for Public Policy, Service Delivery,
Workforce, Technology and Financing

13 January 2020

The Sustainability of Tax-based Health Financing: Examining the Effects of Demographics, Medical Inflation and Economic Growth in Hong Kong by 2039

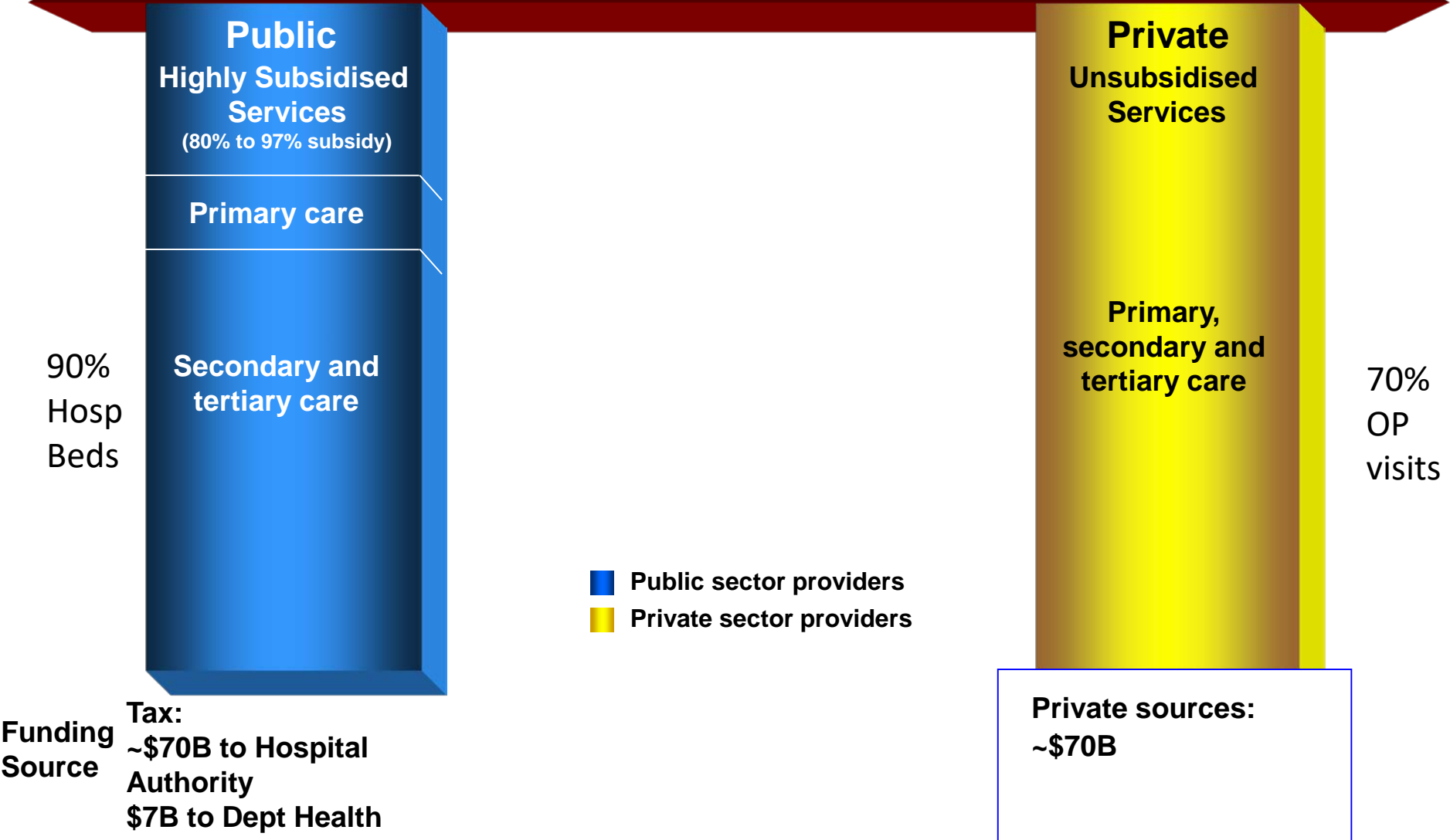
Peter P. Yuen, PhD

Professor and Dean

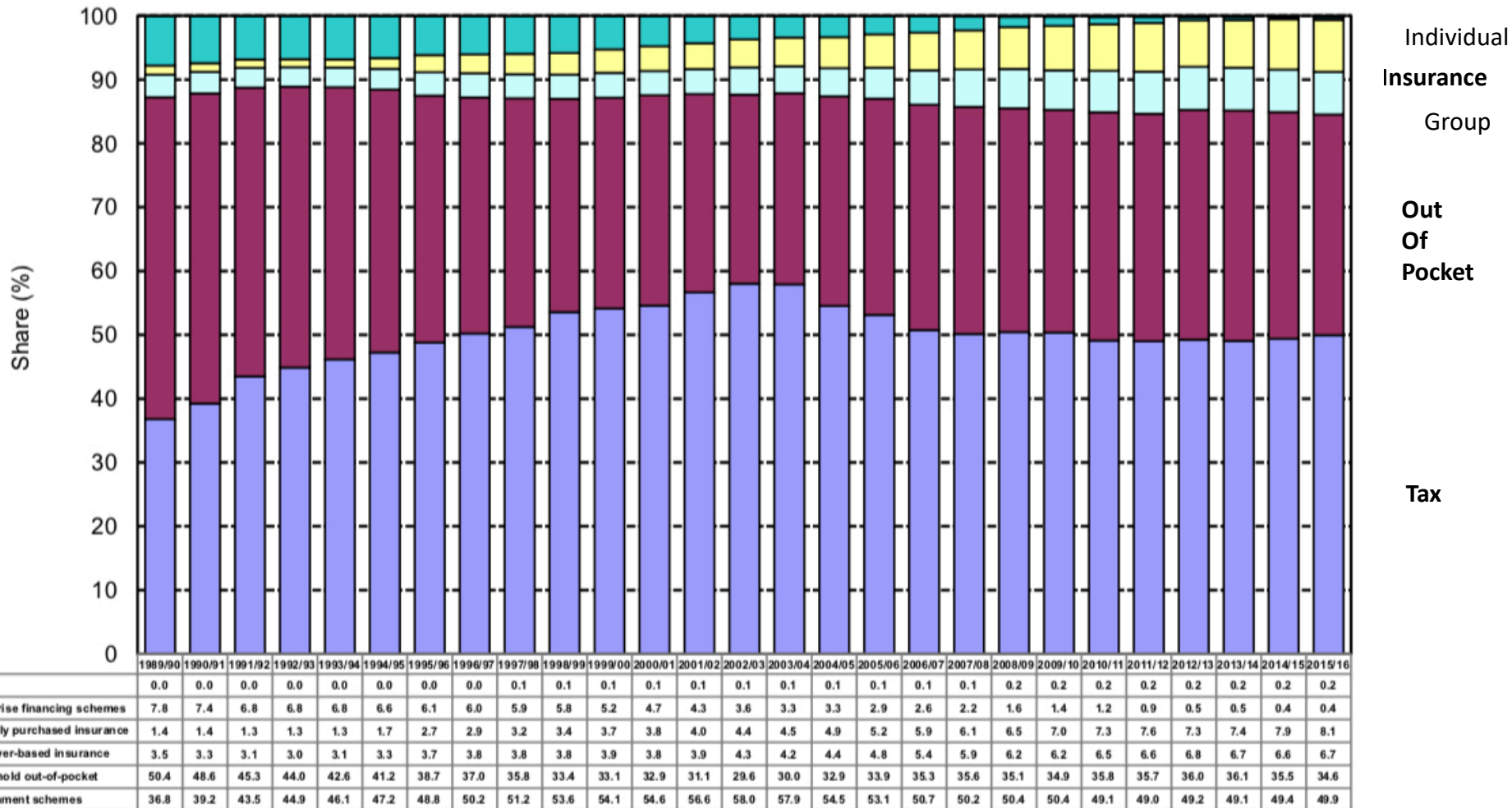
College of Professional & Continuing Education

The Hong Kong Polytechnic University

Current System: Two Pillars

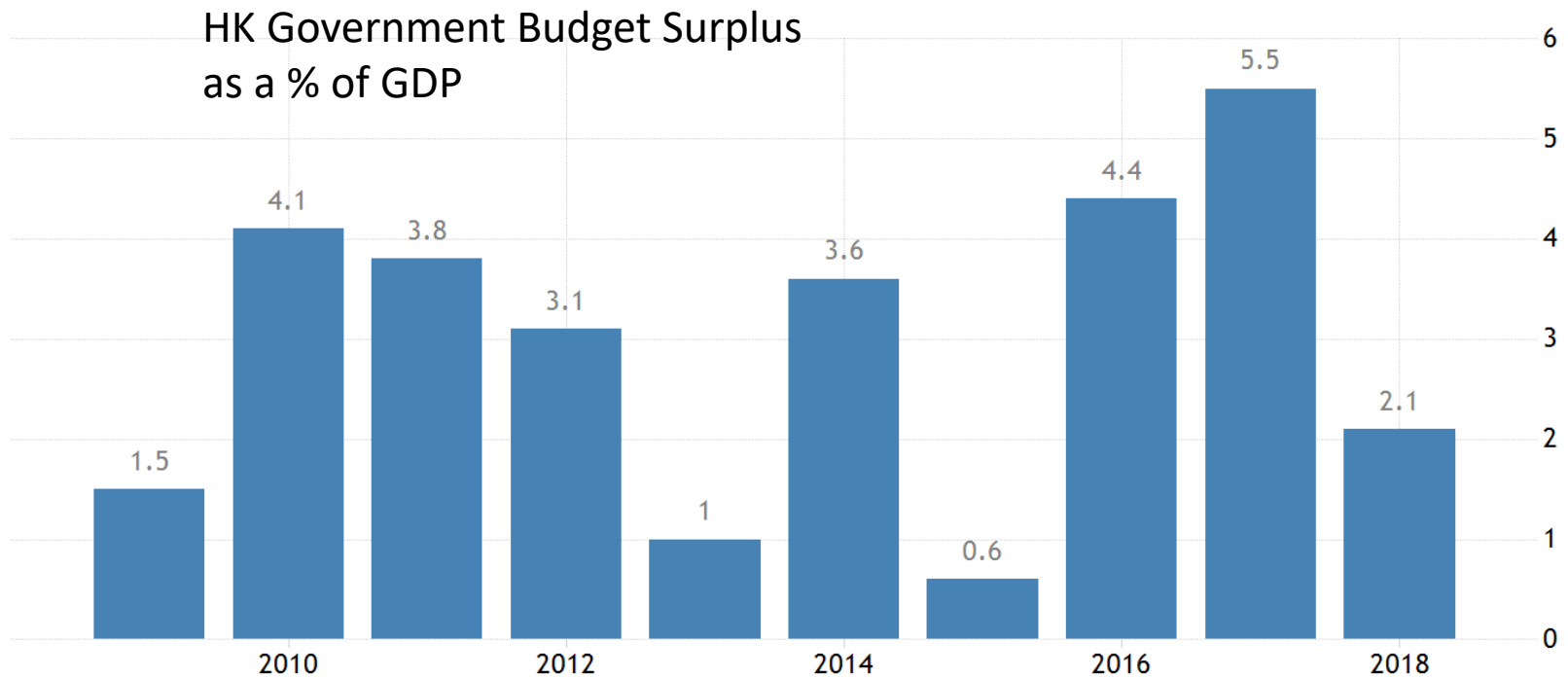


Financing Sources for Health Care 1989-2016



Source: Food & Health Bureau, Hong Kong Domestic Health Accounts

Government Healthy Finances to support Tax Financing



SOURCE: TRADINGECONOMICS.COM | GOVHK

System Already Strained: Long Waiting Time for Patients



明報App



< 港聞

港島西骨科新症等3.75年冠各區

2019/8/1

骨科內科新症輪候時間

醫院聯網 內科(星期) 骨科(星期)

港島東	112	110
港島西	130	195
九龍中	112	135
九龍東	126	135
九龍西	101	109
新界東	123	144
新界西	110	102

註:2018年7月至2019年6月專科門診90百分值數輪候時間

資料來源:醫管局

Waiting time for different Regions for first appointment For Internal Medicine and Orthopedic cases In Weeks

System Already Strained: doctors and nurses overworked

Overworked HK doctors and nurses protest against being overworked and understaffed

Health minister booed as protesting doctors and nurses say public hospitals need more staff, not money

South China Morning Post with additional reporting by Joanne Ma | January 21, 2019

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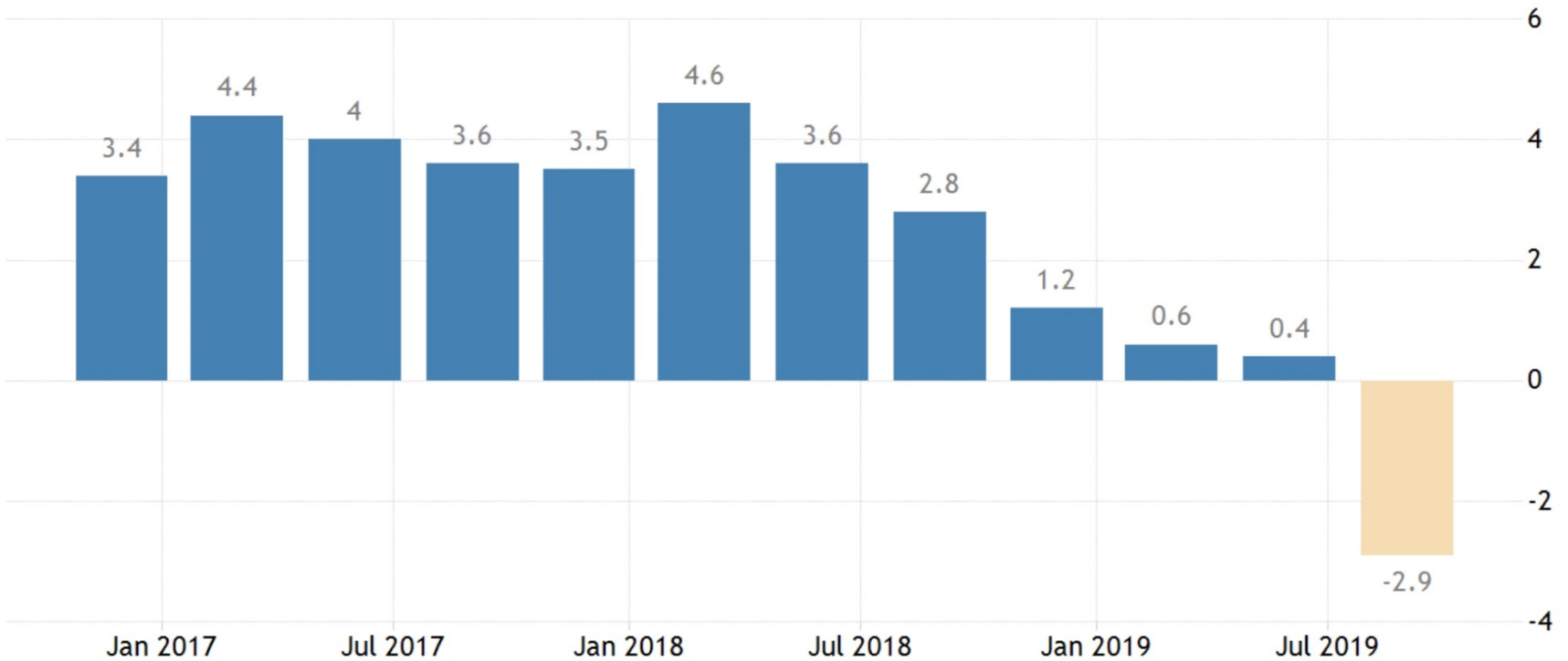
Like 20



The protesters brought black balloons to symbolise their unhappiness.
Photo: Robert Ng/SCMP

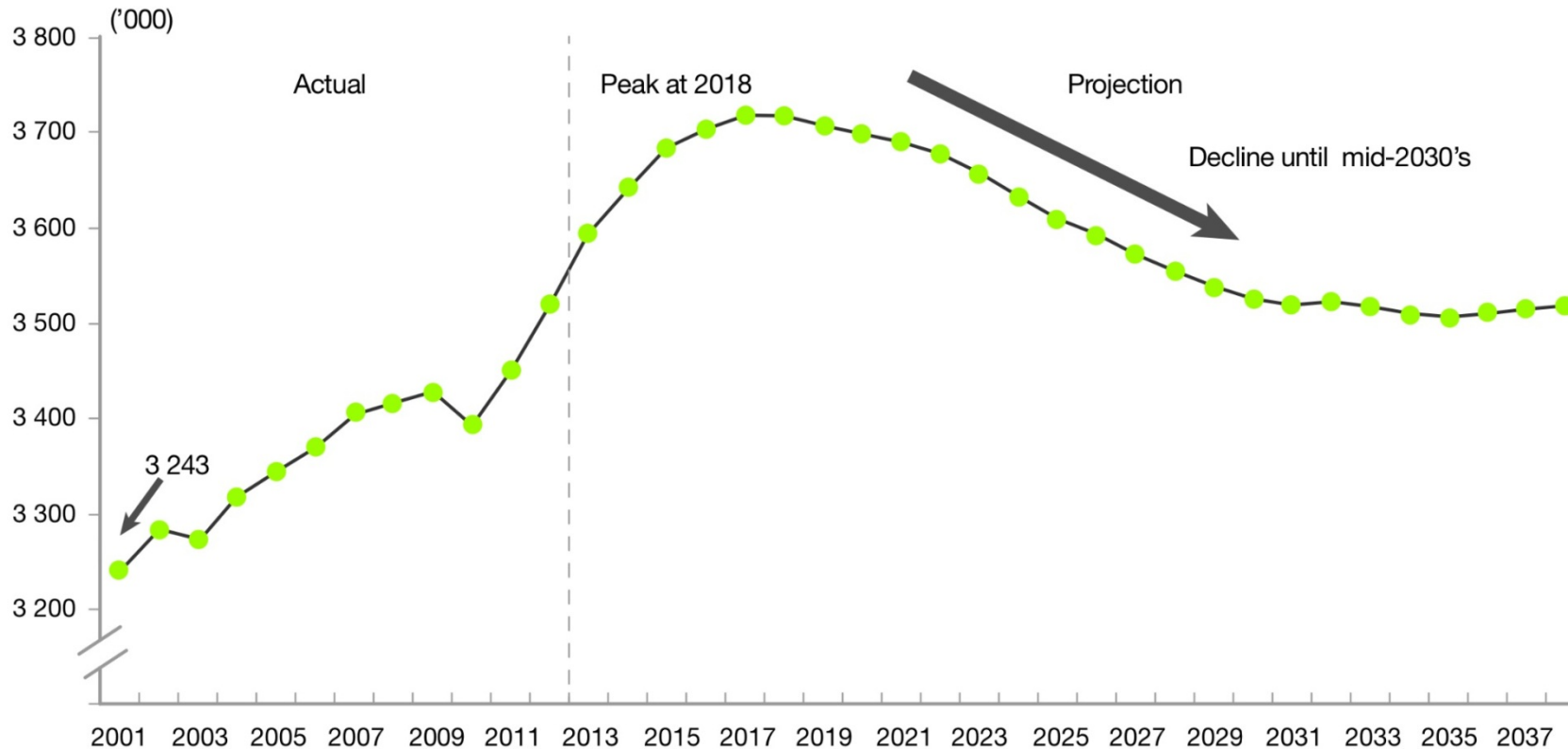
GDP growth rate likely to be **negative**:
Trade War, global economic slowdown, local
prolonged political unrests

Hong Kong GDP Annual Growth Rate



Steady Decline in Labour Force after 2018 Will Affect Taxation Income and GDP Growth

Chart 1.2: Projected labour force to 2041



Note: Excluding foreign domestic helpers

Source: General Household Survey Section, Census and Statistics Department

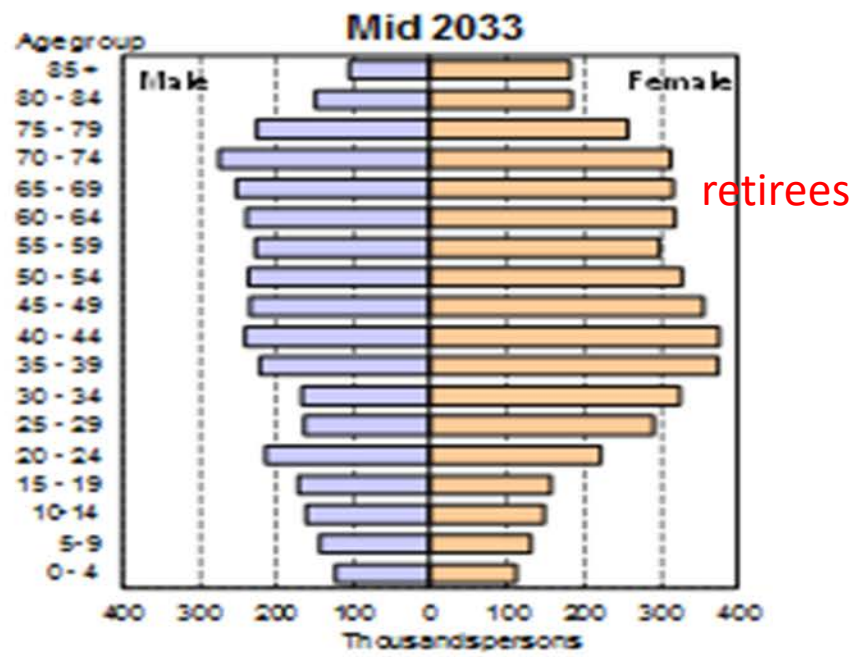
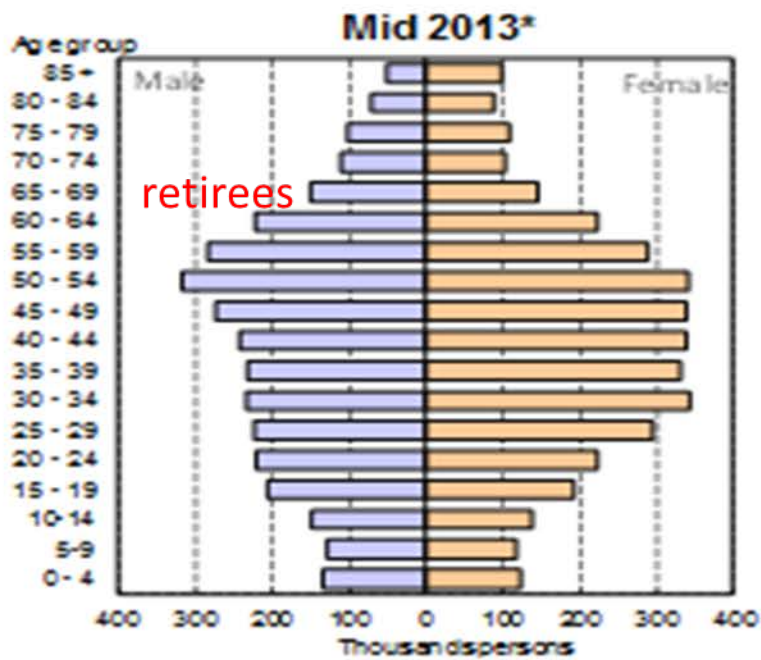
Source: Secretariat of the Steering Committee on Population Policy (2014), *Thoughts for Hong Kong: Public Engagement Exercise on Population Policy*, Chief Secretary for Administration's Office, Hong Kong.

)

Rapid Population Aging

Less income taxpayers; more heavy users

(1) Population pyramid



Note: * Provisional figures

Sources: Hong Kong Census and Statistics Department and Hong Kong Population Projections 2012 -2041

Medical Inflation:

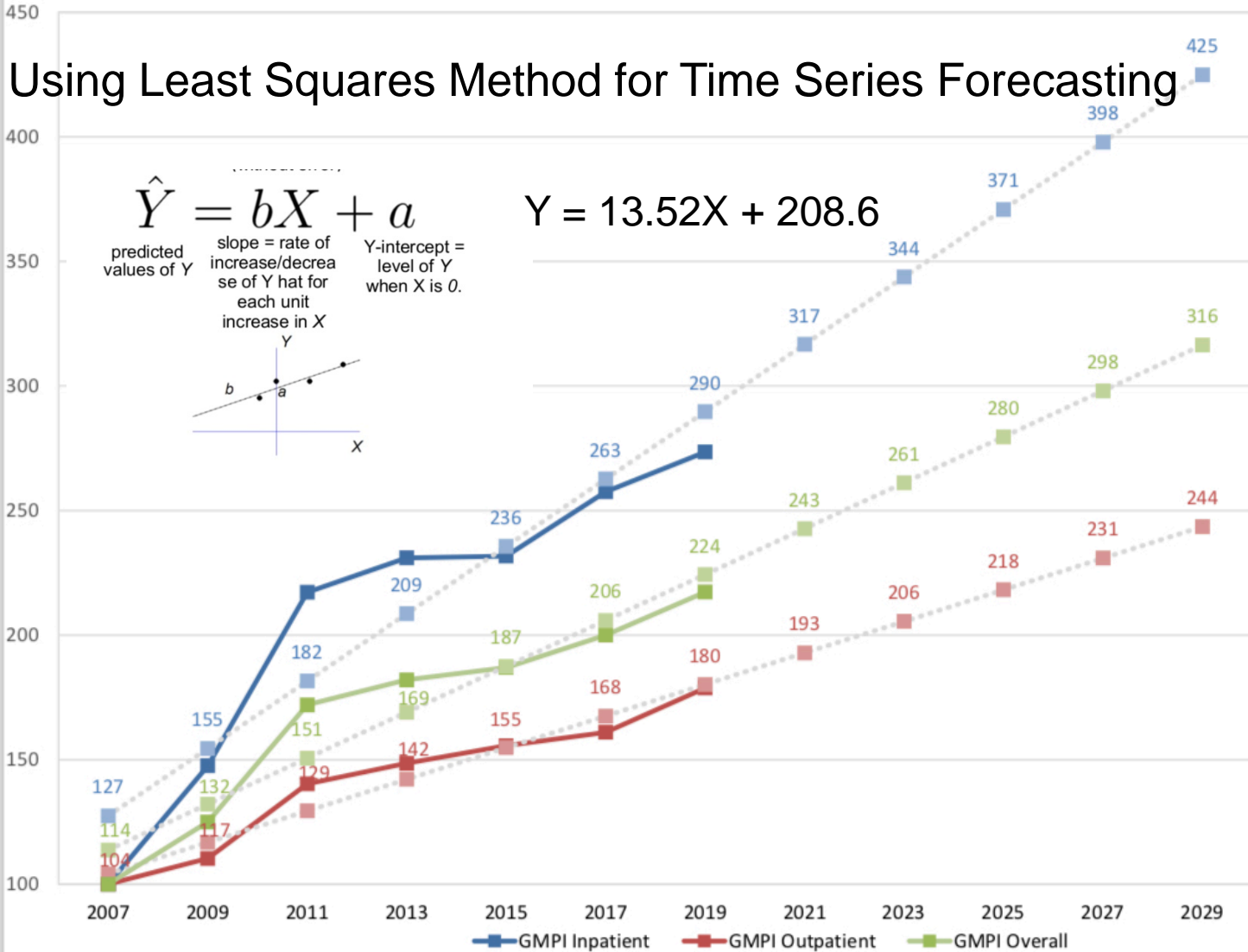
Gainmiles-CPCE Group Medical Premium Indices(GMPI)

- Measure the changes over time of the premium paid by employers for medical insurance
- Consist of three indices –
 - Group Hospital Insurance Premium Index,
 - Group Outpatient Insurance Premium Index, and the
 - Overall Group Medical Insurance Premium Index.

Medical Inflation

Prediction of GMPI in the next 10 years

Using Least Squares Method for Time Series Forecasting



GMPI Inpatient	
R Square	0.8782
Durbin-Watson Statistic	1.1175

GMPI Total	
R Square	0.9087
Durbin-Watson Statistic	1.1964

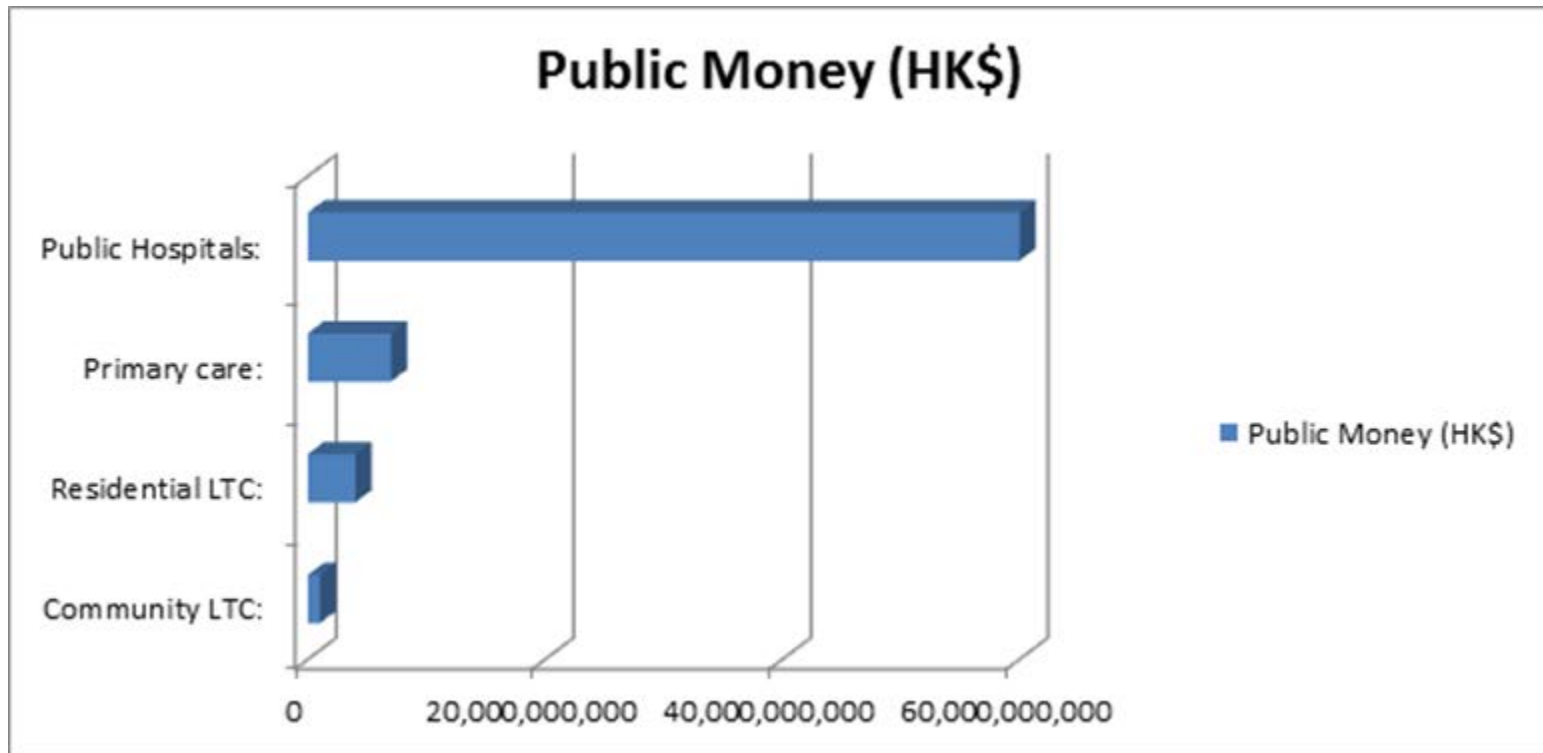
GMPI Outpatient	
R Square	0.9442
Durbin-Watson Statistic	1.6553

Source:

Medical Inflation is much higher than general inflation

- Group Medical Insurance Premium went up by 9% in two years (2017-2019), roughly 4.5% per year (Gainmiles 2019)
- Premium in 2029 will roughly be 1.5 times that of 2019

Allocative Inefficiencies



Hong Kong has a much higher hospital bed level than many advanced countries

Hong Kong	5.1
Norway	3.9
Singapore	3.1
Sweden	2.6
New Zealand	2.8
United Kingdom	2.8

Hospital Beds
per 1,000

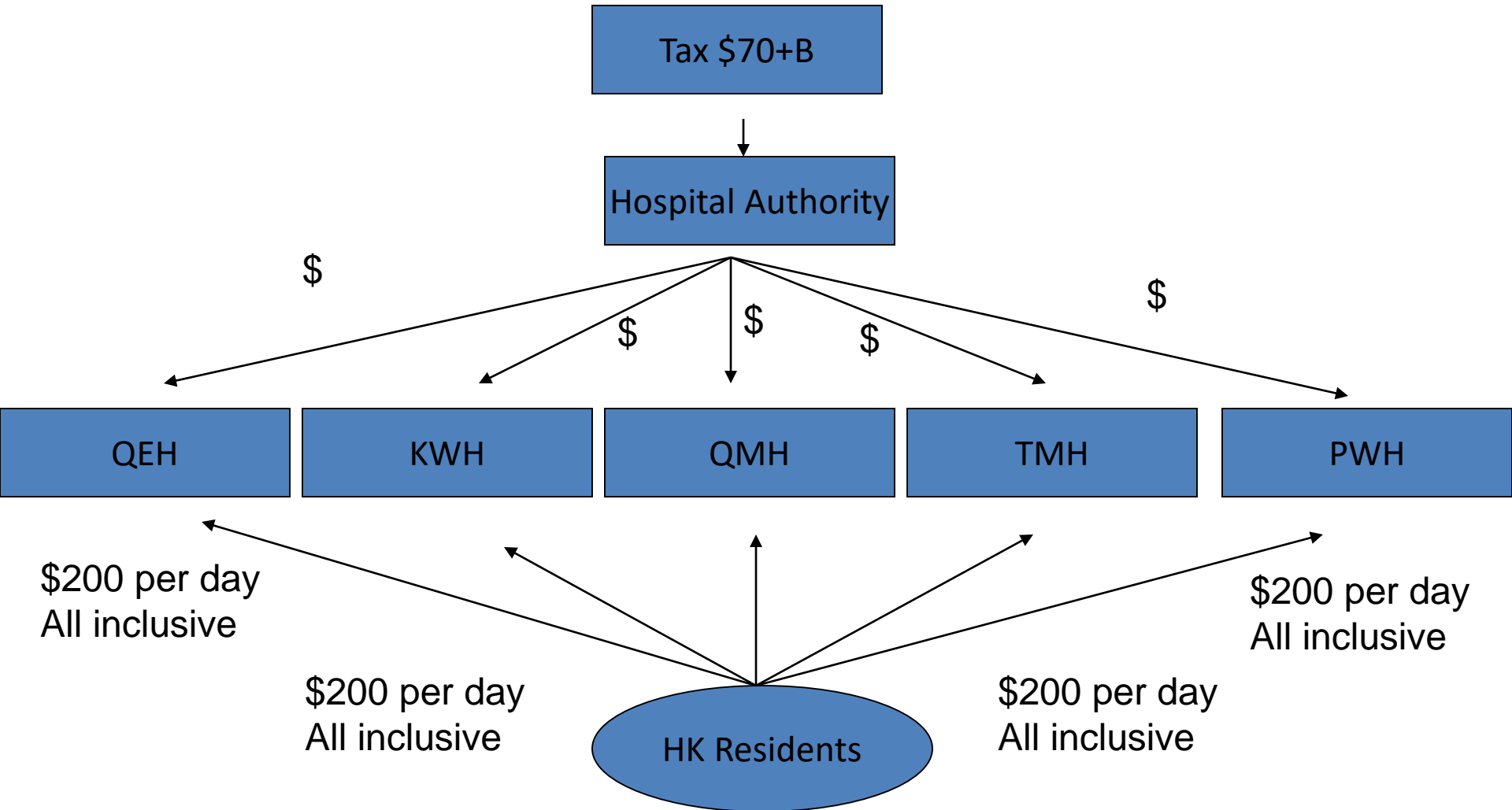
Source: Food & Health Bureau, Hong Kong Domestic Health Accounts

90% of hospital beds are in public hospitals;

~50% of all public hospital admissions were found to be Ambulatory Care Sensitive Conditions (JCSPHPC 2017, Yam et al 2014)

X-Inefficiency of HA

funding model does not incentivized efficiency



Slow Adoption of Technology that can Improve Efficiency

- Despite rapid technological innovations of the digital era, health care governance and regulations have not followed at the same pace (e.g. telemedicine for the elderly)

VHIS not Likely to Make any Significant Difference

- The proposed regulated voluntary private health insurance scheme (VHIS) 's ability to draw and retain a significant number of elderly persons is highly questionable.
- Not attractive to elderly
 - No income
 - Tax incentives are meaningless for them
 - Premium very high for elderly



While Premium Looks Affordability for the Young

Standard Plan for female

Age	Premium	Less tax deduction
25	HK\$ 2,500	HK\$ 2,125
65	HK\$ 9,600	HK\$ 8,400
75	HK\$16,000	HK\$16,000
85	HK\$24,300	HK\$24,300

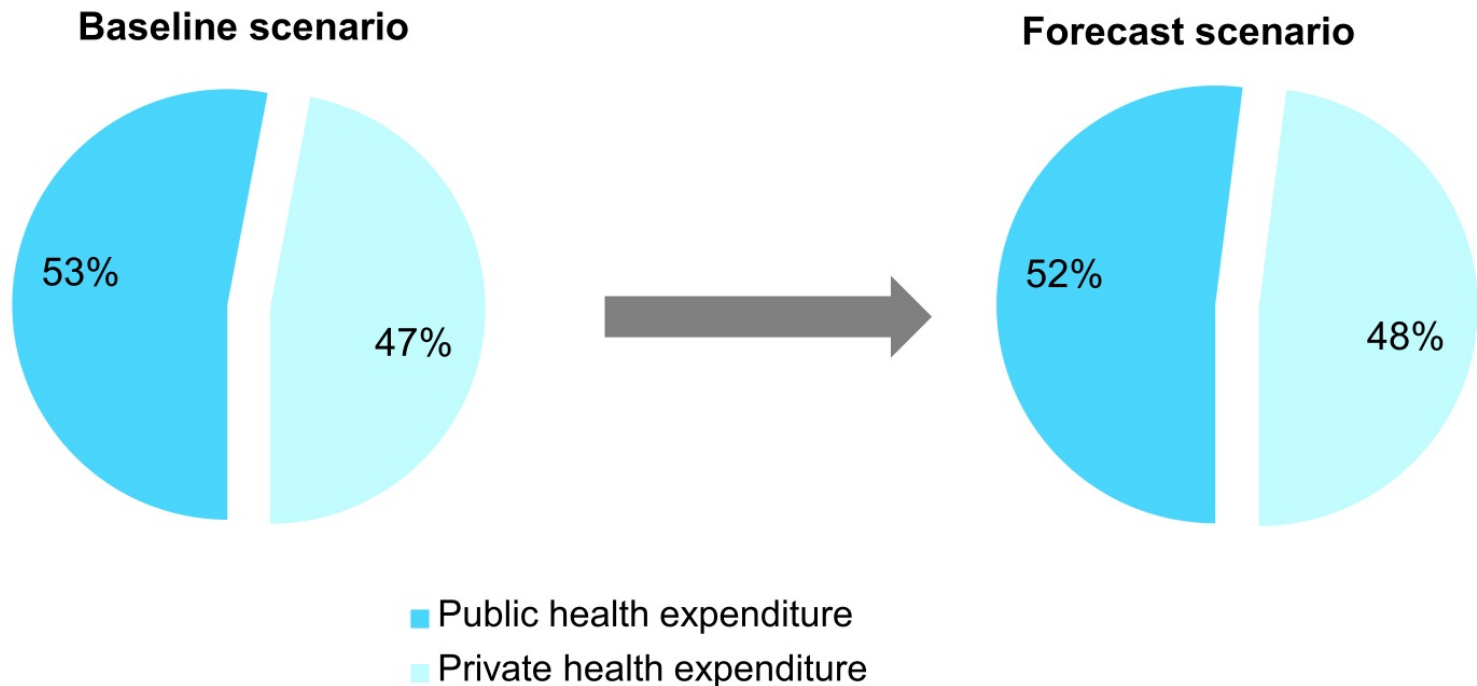
How Much Will It Cost the 65 Year Old When She is 75

- Projection Based on the Group Medical Insurance Inpatient Premium Index Trend line
- 10 years from now, premium for age 75:
- HK\$16,000 @ 4.5% yearly = HK\$24,847

Change in Public/Private Mix by 2040

Not Significant

Figure 8.18 Projected Proportions of Public and Private Health Expenditure in 2040



Source: Consultation Document, Voluntary Health Insurance Scheme, Food & Health Bureau, HKSARG, 2014

Initiatives in the Right Direction

- Kwai Tsing District Health Centre (DHC)
 - a Core Centre supplemented by Satellite Centres to be managed by NGOs and a network of medical and healthcare practitioners, to tackle
 - Hypertension; Diabetes mellitus; obesity; fall risk; and Lifestyle risk factors
- Too little, too late
- Again funded mainly by taxation, which is shrinking

Long Term Care is also financed by taxes and patients/family out-of-pocket

- LTC expenditure is projected to increase from the current level of 1.4 % of GDP to a range of 2.2 - 4.9 % of GDP by 2036 (Chung 2009), which would be amongst the highest within industrialized countries (OECD 2011).
- No discussion of alternative LTC financing since 1998 (Harvard Report's MEDISAGE)

How Bad Will It Be in 20 Years Time

Parameters

- Population
- Elderly population
- Medical inflation
- Economic growth

Current Health Care Funding Level from Taxation

2019 Health Care Funding Level: \$72.7B

2019 Population: 7.5M

- % elderly: 18.5% → 1.4M
equivalent to 5.6M population units (X4)
- % non-elderly: 81.5% → 6.1M population units (X1)

Total = 11.7M population units

Per population unit funding: $\$72.7\text{B}/11.7\text{M} = \$6,214$

Demographics in 2039

2039 Population: 8,196.2K

- % elderly: 32%% \rightarrow 2.6M \rightarrow 10.5M population units (X4)
- % non-elderly 68% \rightarrow 5.6M population units (X1)

Total = 16.1M population units

Maintaining 2019 Per population unit funding: \$6,214

Total Healthcare funding Requirement:

$\$6,214 \times 16.1\text{M} = \sim \100B

(Based on population level and ageing only)

Medical Inflation

Medical Inflation Adjustment

- @4.5% per year compounded for 20 years :
\$241.1B :

funding requirements for 2039 based on 2019 level

Assuming GDP Growth Rate Same as the Past 20 years

Funds Available in 2039

- Scenario 1 : main same GDP growth rate of the past 20 years: average 2.7% per year
- GDP in 2019: \$2,987.60B
- GDP in 2039 = \$5,090.16B
- Public expenditure (20% of GDP) : \$1,018.03B
- Public healthcare expenditure (18% of public expenditure) : \$183.25B : funding available
- Requirements: \$241.1 B
- --> inadequate: **\$57.85B** short (less 30%)

Assuming GDP Growth Rate Reduced by Half

Funds Available in 2039

- Scenario 2 : GDP growth rate is half that the past 20 years' average : 1.35%
- GDP in 2019: \$2,987.60B
- GDP in 2039 = \$3,906.95B
- Public expenditure (20% of GDP) : \$781.4B
- Public healthcare expenditure (18% of public expenditure) : \$140.65B : funding available
- Requirements: \$241.1B
- --> inadequate (**\$100.45B short**, 70% less)

Conclusions

- The health financing situation is gloomy.
 - ageing population
 - negative economic growth
 - no effective measures to improve allocative efficiency
 - no effective measures to improve technical efficiency (incentives, or the use of technology)
 - No significant supplementary financing mechanisms for healthcare or long term care

- Even if economic growth can be maintained at the same level as that of the past 20 years, the situation would still be much worse off than now
 - Quality of care in the public sector will suffer greatly
 - The less well-off will suffer most
- If economic growth is reduced by half, the system cannot function

- Status quo is not an option
- Do things more or less the same will be irresponsible
- Drastic change is needed



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Questions