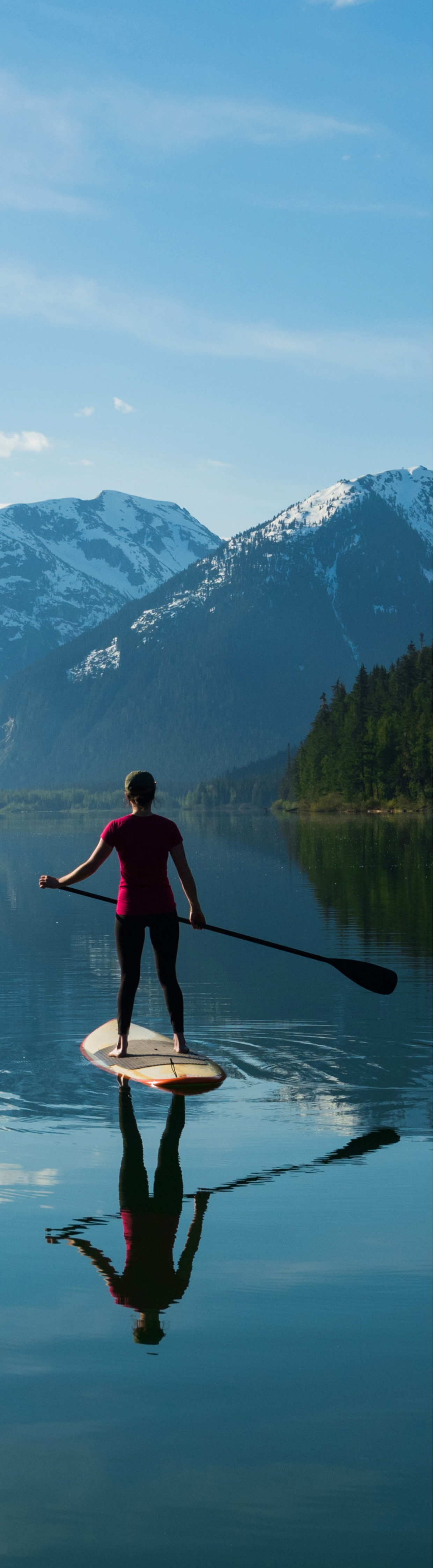


Manulife Investment Management

Asia Thought Leadership Series

The importance of staying active: Investing for retirement in uncertain times

Retirement issue 2

Standfirst

Our first report examined the structural challenges of pension reform in Asia. In so doing, we took a multi-pillar approach that examined pension sustainability, and we looked in depth at the unique pension reform journeys underway in three Asian markets: China, Malaysia and Hong Kong.

In this paper, we are shifting our focus to retirees who, in the coming decades, will need to make critical savings and investment decisions in an increasingly uncertain macroeconomic environment. Importantly, this paper will also factor in the challenge that the current prolonged era of low returns is expected to bring.

Executive summary

Retirees around the world face common challenges, with the most significant being the end of a decades-long period of reliable investment returns. This is due to an environment of record-low interest rates and lower growth, which means less income from fixed asset investments, and fewer dividends from stocks as companies seek to conserve cash.

In our view, the current low-interest environment is likely to continue for years. At the same time, key stock markets are at or near record highs, with concerns about company valuations and the direction those markets will take next.

While that is challenging enough, the effects of COVID-19 have exacerbated the situation. In response, some governments have allowed employees to reduce or defer pension payments, or to draw down from their existing pension pots to meet immediate needs. That's sensible from a short-term perspective, but there is no avoiding the consequence that those people will one day have less in their portfolios.

That comes as many countries in Asia are dealing with a retirement gap. Contributory factors are rapidly aging populations, a lack of savings, and inflation – especially in areas like healthcare. Others include a cash-heavy allocation of pension assets, and aspects related to the economy and its recovery.

In short, there is much to concern policymakers and retirees alike.

In this paper, we look at the broader Asian scenario, before narrowing our focus on how the current environment is likely to affect investors in Hong Kong and Singapore. Residents in both markets benefit from excellent public pension schemes, yet members of those schemes lack protection against longevity- and retirement-related inflation risks.

To assess their level of protection, we ran simulations to determine whether residents of these two high-income financial centres are likely to face a shortfall after they retire (for our hypothetical Hong Kong couple that will be in 2030; for their Singaporean counterpart, it will be 2035). We'll look at those results later. For now, it's sufficient to say that any risk of a shortfall is significantly lower if couples start saving and investing even only a few years earlier.

Investing early and staying invested in an active way, then, is a core message. Our hope is that retirees across Asia – for whom we've written this paper – will look at some of the options we've outlined and make changes that will help them to better meet their retirement needs. After all, although being retired brings many rewards, it also has its challenges. Running out of money need not be among them.

Introduction: A turbulent time ahead

The era of reliable investment returns appears over, at least for the foreseeable future, and that poses significant challenges for retirees in Asia. COVID-19 has made matters worse with a low-interest rate (and, in some countries, a negative-interest rate) environment coupled with low bond yields, and has all but guaranteed an uncertain trajectory for stock markets.

Ongoing monetary easing in many countries means interest rates will likely stay low for years. At the same time, the economic environment has seen many firms reduce or eliminate dividends, which for years provided retirees with an important, dependable income stream.

These factors have compounded existing worries about a retirement savings gap, while certain actions by governments to counter COVID-19's economic effects have added to the long-term challenge. Some countries have let people contribute less – Malaysia, for example, said employees could decrease their mandatory contribution.[1] Other efforts include deferring planned hikes in public pension contribution rates (Singapore) and letting people draw down from their personal pension plans (South Korea).[2]

Deferring planned hikes and allowing access to saved funds are sensible short-term solutions that help people to pay mortgages and meet key needs. But they also mean savers are mortgaging the present as they will have less in their retirement pot and will miss out on compounding – which can significantly reduce retirement income.

This paper examines the long-term macroeconomic factors we believe will affect retirement-focused investments in the coming decades. In particular, we analyse how they will affect investment returns across a range of asset classes that comprise basic retirement portfolios.

That allows us to show what this means for investors and, through hypothetical modelling, calculate the investment and income needs of pre-retiree couples in Hong Kong and Singapore, and recommend courses of action.

[1] Highlights of Budget 2021 proposals, The Star (November 6, 2020).
See: https://www.thestar.com.my/business/business-news/2020/11/06/highlights-of-budget-2021-proposals

[2] Asia pensions under pressure on early withdrawals, Asian Investor (April 24, 2020).
See: https://www.asianinvestor.net/article/asian-pensions-under-pressure-on-early-withdrawals/459593

Part 1: The retirement gap and why it matters

Even before COVID-19 roiled global asset markets and increased investment uncertainty, Asian retirees faced significant retirement challenges that threatened to widen the existing retirement gap in many markets. Those fall into three broad categories: demography and a lack of savings; inflation and the allocation of pension assets; and issues related to the economy and its recovery.

A. Demography and savings

Pension systems are under pressure from the unprecedented pace of demographic change sweeping the region. While Asia's overall population is estimated to grow 19 percent between 2015 and 2050, its population aged 60+ will increase almost 150 percent.[3] China and India could see their elderly populations double.

One driving factor is that people are living longer. Medical advances, healthier lifestyles and a decline in communicable and non-communicable diseases have increased life expectancies across the region. Between 1975 and 1980, the average life expectancy for 60-year-olds was 16 years. Today, it's expected to reach 23 years by 2050-2055, meaning the average Asian will live well into his or her 80s. In markets like Japan, Hong Kong, Singapore and South Korea, it's estimated that half of the population will live beyond 90, spending decades in retirement.[4]

Another factor is low birth rates. Of key Asian markets, only India has a birth rate above the threshold of 2.1, which is considered sufficient to sustain a stable population.[5] Birth rates for Japan (1.33), Singapore (1.26) and South Korea (1.24) are among the lowest in the region.[6] At 1.53, China's birth rate in 2019 was at its lowest for decades.[7]

[3] Spotlight on retirement, Asia, LIMRA and the Society of Actuaries (2018). See: https://www.soa.org/resources/research-reports/2018/spotlight-on-retirement/

[4] Ibid.

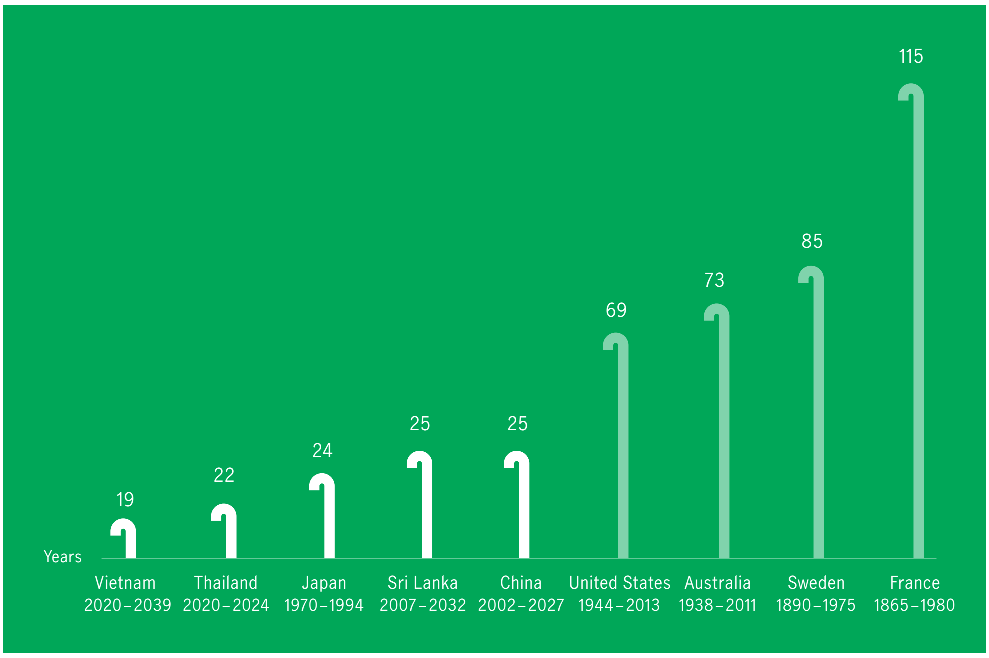
[5] Replacement fertility is the total fertility rate at which women give birth to enough babies to sustain population levels. According to the UN Population Division, a total fertility rate (TFR) of about 2.1 children per woman is called replacement-level fertility). TFR data as of 2017. Sourced from The Lancet (July 14, 2020). See: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30677-2/fulltext

[6] Ibid.

[7] National Bureau of Statistics of China, 2020.

Chart 1: Countries' transitions to aged societies

The time taken in years to move from ageing to aged society



Source: United Nations Economic and Social Commission for Asia and the Pacific Ageing in Asia and the Pacific, 2016.

As a result, the proportion of the working-age population to retirees is shrinking, putting an enormous funding strain on the region's pension systems. What's uniquely challenging for Asia, however, is the pace at which the transition is occurring, which is three to four times faster than most developed nations. This means that what typically occurs over a century elsewhere is happening within a single generation in Asia (see Chart 1). The economic tailwind of having a growing working population has reached an inflection point and is slowly becoming a headwind.

In the future, there will be far fewer working people supporting the elderly. Under current scenarios, the pension systems of most markets won't be able to provide adequate income replacement for retirees. That has put pressure on those systems to ensure long-term sustainability.

At the same time, many people in these fast-ageing nations fear they don't have enough saved for their retirement. While it's true that most adults across Asia have taken steps towards retirement planning, it's also the case that their confidence in the effectiveness of their savings is low: fewer than half believe they have enough savings to last until the end of their retirement.[8] Confidence is especially low in Hong Kong, South Korea and Japan where 37 percent, 33 percent and 20 percent respectively believe they are covered.

[8] Spotlight on retirement, Asia, LIMRA and the Society of Actuaries (2018), op cit.

One issue is that roughly one-fifth of workers lack access to a retirement plan with their current employer. Employer-sponsored defined contribution plans can provide a valuable pathway to supplementing state-run pension systems – and also serve as a medium for delivering sorely needed financial education, given that most Asians do not work with a financial advisor or have a formal written plan for managing income, assets and expenses in retirement.[10] A remarkable 50 percent of Singaporeans do not have access to an employer-sponsored retirement plan although, as we'll see later, Singapore's state-run programme is a model for the region. Even when employer-sponsored plans are in place, a sizeable proportion of people don't take advantage of them: across Asia, about two-fifths of employees do not contribute to their workplace retirement plan.[11]

An additional consideration is the rise of the gig economy, where Asia is a front-runner. This profound change in the world of work requires yet more financial preparation.

B. Double-whammy: Inflation and the cash-heavy allocation of assets

Inflation is another challenge, eating into retirement savings or wealth, and leaving less for retirees. Inflation is even more important for retirees as it is typically higher for the basket of goods and services that they tend to purchase like healthcare, housing and food.

Take healthcare for example. In most surveys that seek to understand the cost for employer-sponsored medical plans[12] in Asia Pacific, it's common to find that the net annual medical trend rates exceed 5 percent on top of 3-4 percent general inflation. This figure could serve as a proxy to understand the inflation implications that people without employer-sponsored/subsidised programs could face when it comes to healthcare goods and other treatments.

Additionally, some people might not realise that their health insurance premiums will increase as they age. For example, referencing products in Hong Kong and Singapore shows that people in their mid-50s usually face a higher insurance premium rise than those who are younger. In Singapore, the typical premium increases by 50-70 percent per decade of ageing.[13] As a result, a less robust investment or savings plan would consume more retirement savings, which could impair the budget-planning that people do for retirement.

9 Ibid.

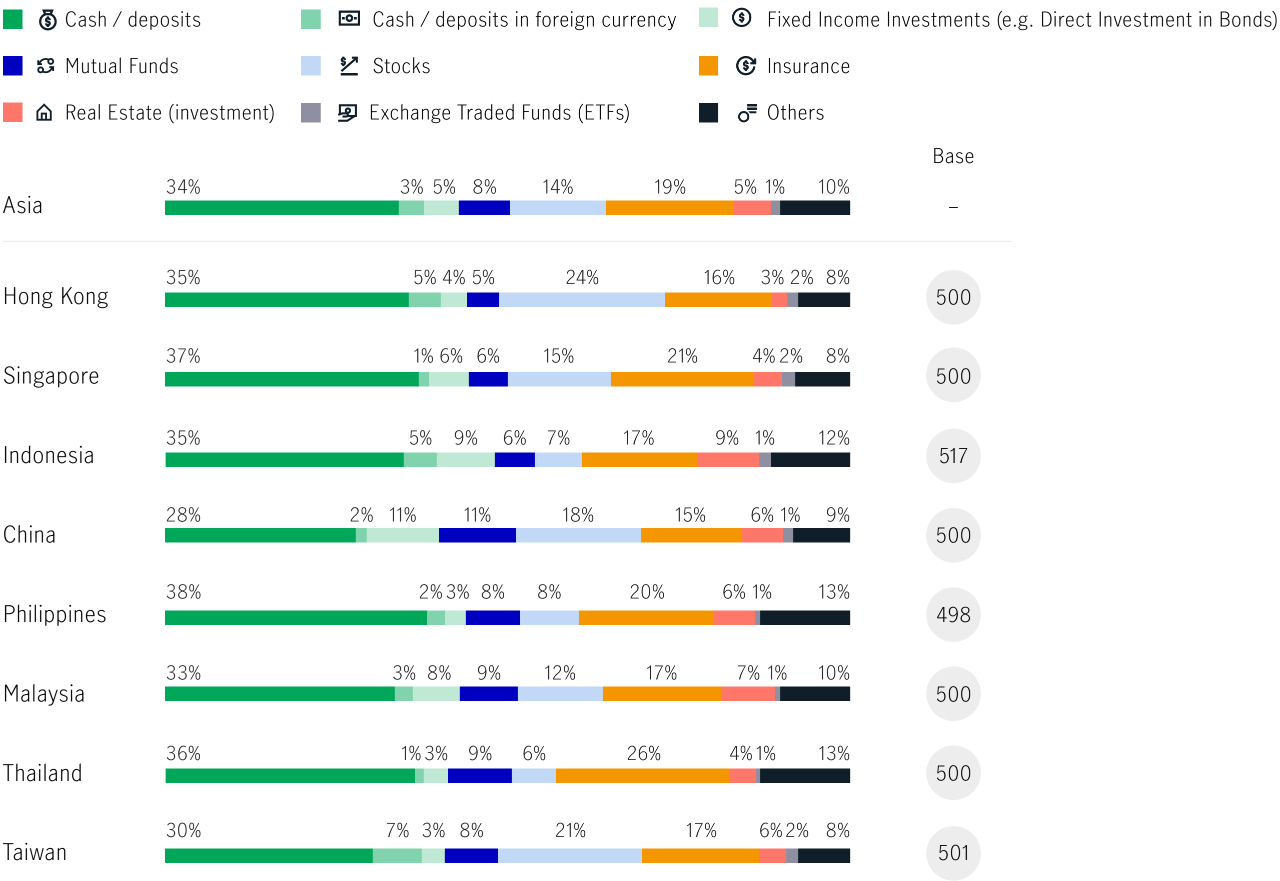
10 Ibid.

11 Ibid.

12 A health policy selected **and** purchased by the employer and offered to eligible employees and their dependents. The employer will typically share the cost of the premium for employees.

13 Average Cost and Benefits of Health Insurance 2020, Value Champion (December 4, 2019). See: https://www.valuechampion.sg/average-cost-and-benefits-health-insurance

Chart 2: Asian household asset allocation[14]



Complicating this further is the cash-heavy asset allocation of the typical investor in the region. In our most recent Manulife Investment Sentiment Index (MISI), the surveyed affluent households in Asia[15] held 37 percent of household assets (excluding the value of the primary residence) in cash, with another 23 percent in stocks, mutual funds and ETFs (see Chart 2). A further 19 percent are held in insurance products, and 5 percent each in fixed income investments and real estate as an investment. While numbers fluctuate by market, cash is the most popular asset choice in every case. An environment of inflation and near-zero percent interest rates means the real value of that cash will diminish each year.

It's not hard to see why retirees in countries across Asia face a perfect storm. That's particularly true for people who are already retired or who are, say, five or ten years away from starting to draw a pension. After all, the closer to retirement people are, the more they need cash flow – not exposure to buy-and-hold stocks that younger investors focus on for capital appreciation over decades. Those challenges will be further compounded as traditional family support for the elderly declines.

[14] Manulife Investor Sentiment Survey, as of December 2018.

[15] Eight markets include Hong Kong, Singapore, Taiwan, China, Malaysia, Thailand, Philippines and Indonesia. The first four markets with average investable assets from US$140,000 to US$380,000; the latter four markets with average investable assets from US$9,000 to US36,000. Investable asset does not include value of home, other properties, businesses, retirement schemes which does not allow withdrawal at the current point of time.

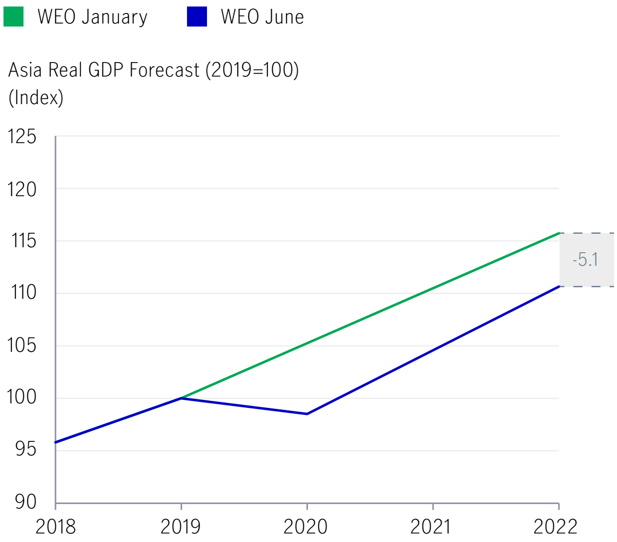
C. Economic outlook and recovery dynamics

The OECD views the region's crucial pension challenges as, "rapid population ageing and low coverage, both for those receiving benefits and those contributing to the pension systems".[16] And, it points out, enacting reforms is politically difficult, "as it often entails unpopular measures, such as increasing the retirement age, lowering benefits or increasing contribution rates".[17]

The OECD drew those conclusions well before COVID-19. The current economic environment means making the necessary changes will be even harder. It's also unclear whether matters will improve much in the years ahead. The IMF concluded in late 2020 that Emerging and Developing Asia would contract 1.7 percent in 2020 (though China would see growth of 1.9 percent).[18] Looking ahead, the IMF expects growth in Emerging and Developing Asia to rise 8 percent in 2021, with China expected to grow 8.2 percent – though it cautions that, on a global view, there is "tremendous uncertainty around the outlook with both downside and upside risks".[19]

That's important because, as the IMF noted earlier in the year, Asia's economic growth is directly linked to global supply chains – so weak demand elsewhere will impact economies here too. In any event, Asia's economic output would be markedly lower in 2022 than it would otherwise have been, the IMF said – "and this gap will be much larger if we exclude China, where economic activity has already started to rebound" (Chart 3).[21]

Chart 3: IMF projections of economic recovery



Source: Reopening Asia: How the Right Policies Can Help Economic Recovery, IMF (June 30, 2020). See: https://blogs.imf.org/2020/06/30/reopening-asia-how-the-right-policies-can-help-economic-recovery/

All of these factors will compound the difficulty of closing the retirement gap, which is already wide in a number of Asia-Pacific economies and which is set to grow further. And the challenges don't end there. Another is that, going forward, assets traditionally regarded as safer could provide lower returns for conservative investors as a result of the global pandemic and related economic shutdowns.

[16] Pensions at a Glance Asia/Pacific 2018, OECD (2018). See: https://www.oecd-ilibrary.org/finance-and-investment/pensions-at-a-glance-asia-pacific-2018_pension_asia-2018-en

[17] Ibid.

[18] A Long, Uneven and Uncertain Ascent, IMF (October 13, 2020). See: https://blogs.imf.org/2020/10/13/a-long-uneven-and-uncertain-ascent/

[19] Ibid.

[20] Reopening Asia: How the Right Policies Can Help Economic Recovery, IMF (June 30, 2020). See: https://blogs.imf.org/2020/06/30/reopening-asia-how-the-right-policies-can-help-economic-recovery/

[21] Ibid.

In our view, this condition will likely persist for some time, not least because central banks across the region lowered policy rates in 2020 to buffer economies from the loss of global trade, tourism and other COVID-related setbacks.

Those actions have had a direct effect on bank deposit interest rates – with deposits, as we've seen, constituting a crucial holding across Asia. Real deposit interest rates (the interest rate after inflation) in China, Hong Kong, Japan and Vietnam are all below zero percent (see Chart 4), which makes it impossible to generate income replacement from these sources.

Chart 4: Real interest rate (deposit) in Asia[22]

[22] Real interest rate (deposit) in Asia are presented on per annum basis by subtracting average headline CPI inflation from average 3-month time deposit rate (October 2019- September 2020). Bloomberg, websites of Asian central banks and major banks; Data as of September 2020. Over a 1-year period, these markets are experiencing deflation: Malaysia (-0.508%), Taiwan (-0.053%) and Thailand (-0.645%).

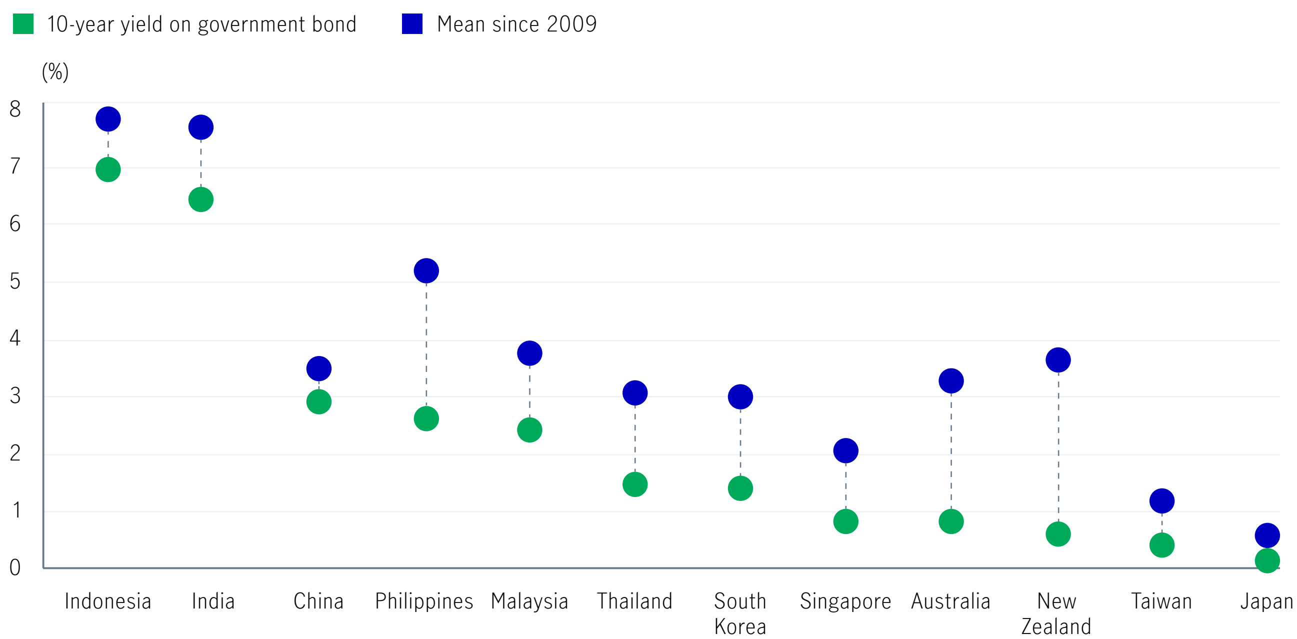
Looking ahead, several factors will contribute to a deflationary environment, including an ageing demographic, rising debt and ongoing digitalisation. We've incorporated those aspects into our forecasts, but we also recognize that the combined impact of significant monetary and fiscal easing by governments – not to mention a global supply-side shock – will likely have an inflationary effect in the coming decade.

Ongoing quantitative easing (QE) by central banks, in which they buy government debt to inject cash into the economy, is pushing up the prices of longer-dated bonds and pushing down yields. Six Asian central banks announced QE-like government bond-purchasing programmes in 2020, according to the Institute of International Finance, and bond yields are lower across the board.[23] In fact, yields are lower than average yields of the past 10 years (see Chart 5), which means investors with sovereign bonds as fixed income holdings in their retirement nest egg are yielding less and less. This implies investors will need to get used to the idea that interest rates will likely stay at, or below, zero percent for the foreseeable future.

In summary, retirement savers in Asia faced several challenges heading into 2021, including demographic changes that will put pressure on pension systems, a perceived savings gap, and a preference for conservative fixed income vehicles and cash. Now, in response to the pandemic, central banks are putting pressure on those very sources of income.

In the next two sections, we'll take an in-depth look at two markets, Hong Kong and Singapore, to examine these challenges in greater detail through historical data analysis and try to understand the probability of a shortfall for retirees there.

Chart 5: Lower sovereign bond yields for conservative investors



Source: Macrobond, Manulife Investment Management. As of 24 August, 2020.

[23] Macro Notes: EM Asia—Much Less QE Than Expected, Institute of International Finance (September 23, 2020).

Part 2: A tale of two cities

Hong Kong and Singapore have much in common. Both began their rise as ports and both leveraged their advantage in trade to become financial powerhouses, along the way providing their citizens with some of the best quality-of-life metrics in the world.

Less well-known is that both set up successful pension funds: MPF and CPF. Both funds operate by defining contributions and making them mandatory for most workers, and both are among the world's largest public pension schemes.

When it comes to their beneficiaries, residents of both places face common challenges including declining rental yields (with rising property prices) and steepening inflation in areas like healthcare and housing. Those issues raise questions about how to sustainably finance a minimum or comfortable livelihood after retirement.

As we shall see, there are also important differences between both places in terms of their public and private arrangements which offer useful lessons for their neighbours.

A. Case study 1: Hong Kong

Hong Kong's Mandatory Provident Fund (MPF), which started life 20 years ago, requires a 5-percent compulsory contribution from employers and employees, with those contributions handled by asset managers. The MPF covers nearly three million people – the vast majority of working-age Hongkongers – and recently crossed HK$1 trillion in assets, with a strong recovery in equity markets helping its account balances following a pandemic-related drop. The MPF is now the eighth-largest pension fund in Asia and on track to be in the top 20 worldwide.[24]

Additionally, as a relatively new scheme, the MPF incorporates numerous best practices for international pension fund management and governance. It is, by many measures, a regional and global success. Despite that, Hongkongers still face challenges as they try to close the retirement savings gap with MPF and other retirement plans.

Asset allocation in the saving years

The ability to choose from hundreds of investment options gives MPF members great flexibility and control in how they manage their financial futures. Members must understand which investments make the most sense for their age and financial situation. Investments with too much risk near retirement age can irreparably reduce an account balance once withdrawals begin, while investments that are too conservative can fail to generate enough retirement income for residents of the famously expensive city.

A default investment category introduced in 2017 seeks to balance these risks by diversifying across equity and fixed income, and automatically becomes more conservative over time. Although only 15 percent of MPF accounts are invested in these default investment strategies, they are slowly gaining broader appeal.[25]

Today, the largest weighting across MPF accounts is in equities. In fact, nearly two-thirds of account assets are invested this way, either through pure equity funds or mixed-asset funds that favour equities.[26] This combination of equity funds and mixed-asset funds remains fairly steady in investor accounts across age groups, with the proportion of pure equity funds dipping only in the years immediately before retirement age.

MPF members also tend to invest locally, with 62 percent of total assets invested in Hong Kong-based funds, followed by North America-based funds at 17 percent.[27]

Although the annualised return of the MPF system over the past decade is only 3.8 percent,[28] individual situations can vary widely depending on fund holdings and holding periods. The MPF Schemes Authority is quick to stress the importance of treating MPF holdings as long-term investments. Too many investors fall into an emotional pattern of switching out of funds after they have declined in value due to market dynamics, only to switch back in after they rebound.[29]

[24] Hong Kong's MPF hits HK$1 trillion (US$129 billion) mark for first time, thanks to rally in investment markets, says head of pension regulator, SCMP (September 6, 2020). See: https://www.scmp.com/business/banking-finance/article/3100430/hong-kongs-mpf-hits-hk1-trillion-us129-billion-mark-first

[25] Mandatory Provident Fund Schemes Statistical Digest, MPF Authority, June 6, 2020. [26] Investment

Performance of the MPF System in 2019, MPFA, 2020.

[27] Ibid.

[28] Annualised returns from 31 December 2009 to 31 December 2019, in Hong Kong dollars.

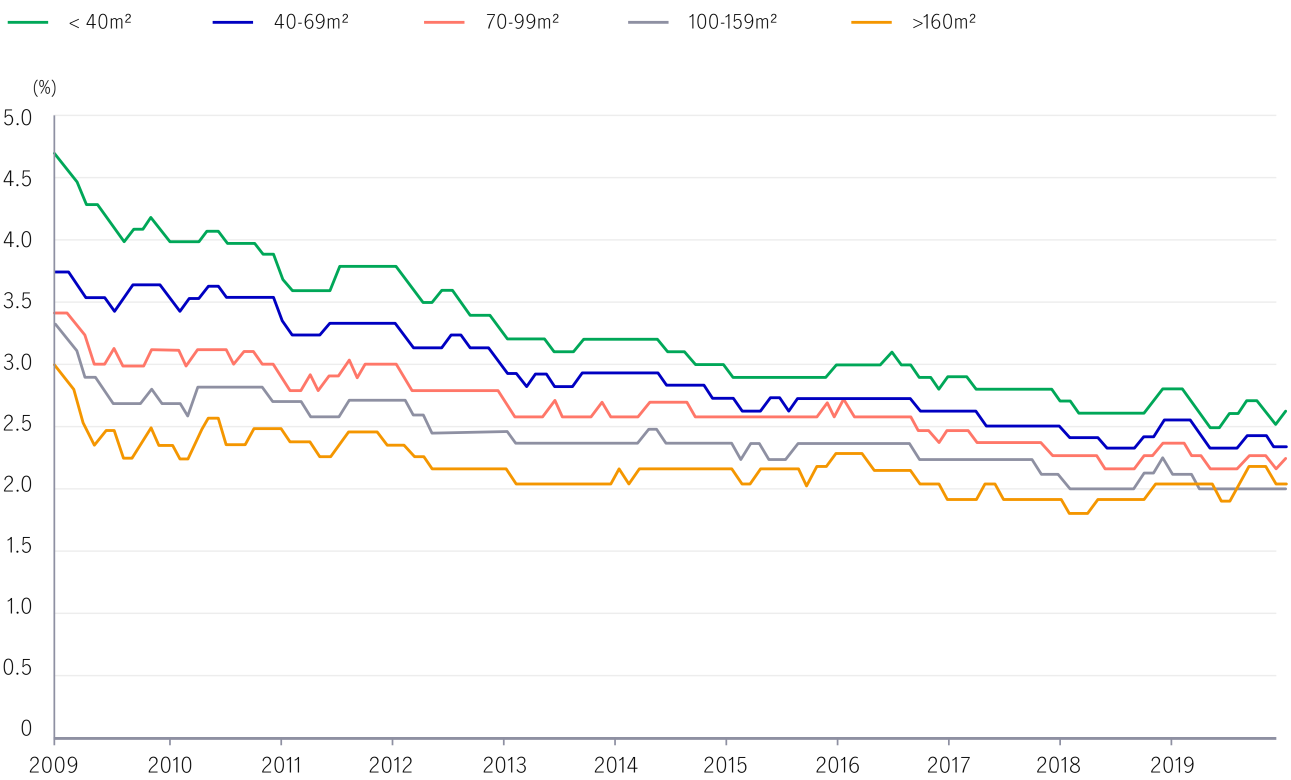
[29] Ibid.

Reinvestment rates in retirement

One important behavioural dynamic of MPF scheme members is their overwhelming preference for taking a lump-sum withdrawal at retirement at age 65: some 98 percent do so, while just 2 percent opt for a schedule of instalment payments.[30] There are two risks associated with the first approach. First, a saver might hastily spend a lifetime of savings unwisely, leaving few options for retirement income. Second – and more likely – he or she risks reinvesting the proceeds in lower-yielding assets in withdrawal phases.

One example is reinvesting those proceeds in property, which has traditionally been a popular asset class in Hong Kong representing a tangible asset with the potential for capital appreciation and an inflation-protected source of income. However, rental yields – taking into account the cost of ownership – have fallen steadily in recent years as property prices have surged (see Chart 6). Across different-sized properties, the average annual rental yield over a decade is just 2.9 percent, some way below the 10-year annualised inflation rate of 3.02 percent.[31]

Chart 6: Rental yields in Hong Kong have fallen steadily over the past decade



[30] Mandatory Provident Fund Schemes Statistical Digest, MPF Authority, June 6, 2020.

[31] Global Property Guide, 2020, 10-year average rental yield, 40-69.9 square meters, from 2009 to 2019. https://www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC/ADVEC/WEOWORLD_

Another popular option for Hong Kong retirees is cash, but at 0.02 percent, the 10-year average savings deposit rate does little to protect against rising costs in retirement. Recent declines in central bank policy rates across the region to combat pandemic-related economic slowing have only cemented the reality of near-zero yields on deposit accounts far into the future.

Other popular tools for retirement

Rental properties and bank deposits are two options. Another is to purchase financial products that generate a retirement income. Indeed, there's a stronger preference towards products that provide a guaranteed lifetime income.[32] One such example is an annuity:[33] the Hong Kong Mortgage Corporations launched the HKMC Annuity Plan in mid-2018 to cater for the needs of elderly, cash-rich residents. The expected monthly pay-out for males at the entry age of 65 would be HK$580 per HK$100,000 premium paid, while for females, the monthly pay-out would be around HK$530 due to their longer life expectancy. The following year, several insurance companies launched a "tax-deductible" qualifying deferred annuity policy (QDAP) in Hong Kong – with the tax-deductible element being the key incentive. More options have emerged in 2020 – for example, an income-oriented product that allows MPF members to stay invested upon their retirement with a drawdown benefit, and with a regular income stream that aims to beat inflation.

Rising retirement cost

Beating inflation, of course, is crucial. However, as we've seen, Hongkongers may struggle to earn even 3 percent annually from a variety of investment options – and retirement-related expenses can easily rise faster than that. In the decade to 2019, for example, the average inflation rate was 3.02 percent[34], so at a glance a 3-percent return looks manageable. However, that overall figure masks higher rates of inflation in categories that dominate retiree budgets like food, housing and medical costs. Indeed, housing and medical costs in particular rose at an annualised rate of 6.83 percent and 8.1 percent respectively.[35] As we shall see, the challenges facing retirees in Hong Kong have parallels with their peers in Singapore.

[32] Spotlight on Retirement Asia, 2018.

[33] For an immediate annuity, the annuitant starts receiving an annuity income once the premium has been paid up in a lump sum. For a deferred annuity, the annuitant contributes and accumulates capital to build up an income stream for retirement. The insurance company invests the capital during the accumulation period and starts to pay the annuitant after a certain period, or at a specified age of the annuitant.

[34] International Monetary Fund, as of 2019: https://www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC/ADVEC/WEOWORLD

[35] Rating and Valuation Department; Global Medical Trend Rates, Aon Hewitt.

B. Case study 2: Singapore

Singapore's pension system is one of the oldest and most developed national schemes in Asia. Established in 1955, the Central Provident Fund (CPF) that administers the system was originally a savings scheme for home ownership, with modest amounts set aside for retirement. However, the government began tweaking the system in the mid-1990s as Singaporeans' incomes grew. With most people owning their homes, the CPF's focus switched to boosting cash savings for retirement. Limits were imposed on withdrawals for housing, and the CPF's savings interest rates were raised.

The CPF features high contribution rates by employees (17 percent of wages) and employers (20 percent), though those are relaxed after age 55, and has a range of accounts and investment options. Lastly, it is centrally managed: pension savings are handed to the government and commingled with state funds, which make a return by investing in assets worldwide.

An attractive – and guaranteed – rate of return

Unlike in Hong Kong, where almost all members choose to take a lump-sum withdrawal at retirement, 42 percent of Singaporeans stay invested in the CPF after reaching 55, which is the minimum age for taking withdrawals.[36]

One reason members remain is the relatively high guaranteed rate of return on savings. By default, the government guarantees 2.5 percent interest on savings in the CPF Ordinary Account (which is meant for housing, insurance, investment and education) and 4 percent on savings in the CPF Special Account (for old age and investment in retirement-related products). The Ordinary and Special Accounts are automatically combined into a Retirement Account when an individual reaches 55; that combined account benefits from the 4-percent return guarantee. From 55, CPF members earn an additional 1 percent interest on the first S$30,000 of their combined balances.

In fact, only 13 percent of active CPF members elect to invest outside of these guaranteed savings accounts, which they do through the CPF's Investment Scheme (CPFIS). This allows them to invest their CPF Ordinary Account and Special Account balances in various investment products such as stocks, bonds and unit trusts (mutual funds). Returns from these investment options have been mixed, with some outperforming the programme's guaranteed savings rates and others failing to keep pace. It's safe to say that on balance these in-plan investment options haven't generated the kinds of returns that would convince Singaporeans to leave their guaranteed return accounts behind.

Who does the CPF money belong to?

While Hong Kong's MPF comprises each individual's pension account, the CPF is a collective social savings pool. It's why the question of "Who does the money belong to?" comes up often in Singapore but not in Hong Kong. From age 55, members' CPF savings are transferred to their Retirement Account (RA) up to the Full Retirement Sum (FRS) of S$181,000. After setting aside the FRS fully with cash, or with property and cash (i.e. S$90,500 which is the Basic Retirement Sum), members can choose to withdraw the remaining cash balances in their Ordinary and Special Accounts. Setting aside a retirement sum (Full or Basic) when members reach 55 allows them to receive a regular monthly income (S$ 1,390-1,490, or S$750-810, based on CPF Life Standard Plan and computed as of 2020) from 65 until 90 through CPF Life, a mandatory deferred annuity scheme introduced in 2009. However, Singaporeans are not free to use a large sum of their retirement savings from the CPF account: some criticise the government for "locking up" their money and want it "returned" so they can use it as they deem fit.

[36] What do CPF members do with the cash withdrawals from their CPF after age 55? CPF Trends, August 2018.

Options for retirees don't measure up

With Singaporeans living longer, citizens must make decisions about how to manage their savings for what might well be decades of retirement. The most recent survey by Manulife found that, besides the CPF, savings and investment returns are the other important sources of retirement income among Singaporeans (see Chart 7). However, their returns aren't always as favourable.

Investing in income-producing property offers a good example. As in Hong Kong, the rental yield in Singapore has declined as property values have increased over the past decade. In 2019, the rental yield of a 75-square-metre apartment in the Central Core region was just 3.28 percent.[38] Bank account interest is another example: deposit interest rates from banks have been low for years, averaging 0.13 percent for the 10-year period through 2019, according to Bloomberg.

Chart 7: CPF, savings and investment returns are the top three main sources of retirement income[37]

	Milennials	Gen X	Baby Boomers
CPF	**69%**	**75%**	**78%**
Drawing down on savings	**57%**	**56%**	**55%**
Investment returns	**51%**	**48%**	**54%**
Retirement plans	31%	38%	35%
Working through retirement	24%	36%	37%
Financial support from children	27%	16%	19%
Supplementary Retirement Scheme	18%	22%	30%
Revenue from selling your property	18%	21%	26%
Additional government assistance	18%	15%	11%
Private pension	8%	7%	6%

[37] Manulife's "3-Generation survey", 2018.

[38] You wouldn't own a Singapore condominium for rental yields! Global Property Guide, June 15, 2019.

At the same time and like Hongkongers, Singaporeans are facing a situation in which certain costs are climbing much faster than the overall inflation rate, which is a relatively tame 1.56 percent (using a 10-year average). Take property rents and property prices: both have risen faster than the general rate of inflation, climbing 1.75 percent and 2.78 percent annually respectively over the past decade.[39]

However, the biggest concern for retirees is healthcare costs. A 2020 report by AON showed medical costs rising at a rate of 10 percent per year due to higher costs for healthcare goods, a growing elderly population, increasing levels of stress and other issues.[40] There is a direct link here to the healthy life expectancy (HALE), which measures the number of years that a person of a given age can expect to live in full health, taking into account mortality and disability. The trend shows that Singaporeans are spending more years in poorer health: life expectancy was 83.9 in 2019 but the HALE metric was 73.9. In other words, poor health resulted in a loss of 10 years of healthy life (in 2015, that figure was eight years).[41] As the population ages, Singapore's retirees may need to look for alternatives beyond their CPF guaranteed rates of return and existing options.

Different cities, similar challenges

In a nutshell, then, while both Hong Kong and Singapore offer enviable developed pension systems, members of the MPF and the CPF lack protection against longevity- and retirement-related inflation risks. What does this imply for retirees? In the next section, we will run a simulation to assess the likelihood that individuals will face a retirement savings shortfall in these two high-income financial centres.

[39] HBD resale price index, SRX Property Index.

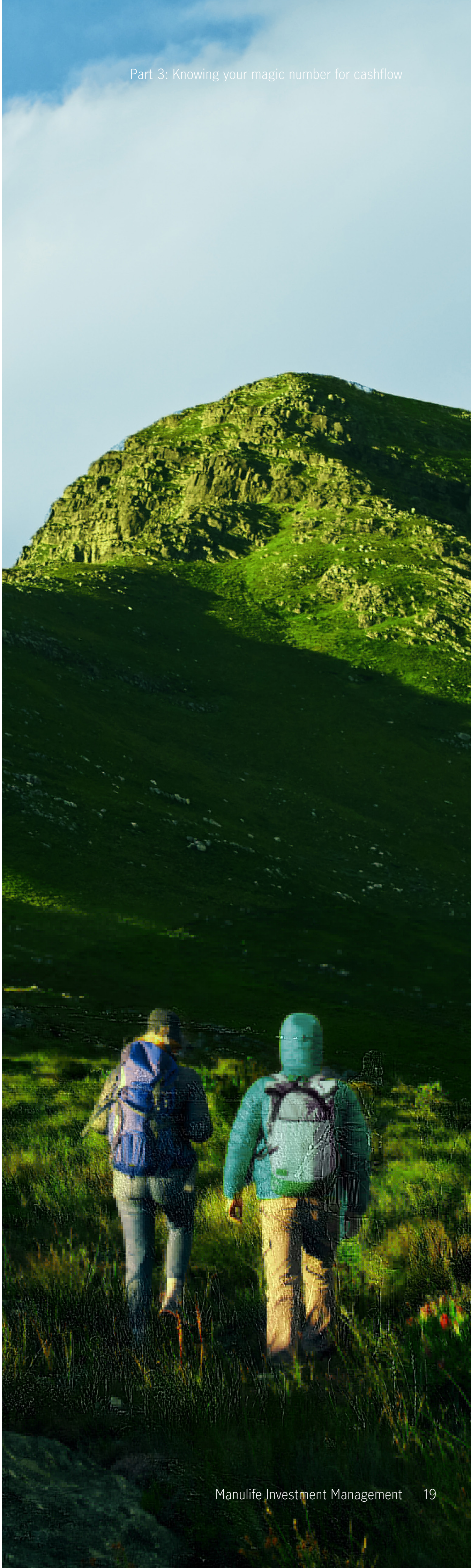
[40] 2020 Global Medical Trend Rates, AON, 2020.

[41] Global Health Metrics: Global age-sex-specific fertility, mortality, healthy life expectancy (HALE) and population estimates in 204 countries and territories, 1950-2019: a comprehensive demographics analysis for the Global Burden of Disease Study 2019.

Part 3: Knowing your magic number for cashflow

Manulife recently conducted surveys in Hong Kong and Singapore to understand people's expectations of their retirement savings. The latest Hong Kong survey highlighted that respondents there expect to have saved HK$3.97 million per person (about US$510,000) by the time they retire.[42] In Singapore, the "magic number" is even higher – people plan to have at least S$930,000 per person (about US$700,000) saved going into retirement.[43] With those numbers, residents of both cities expect they will be able to meet their basic needs and enjoy a relatively comfortable retirement. In reality, though, most people probably won't save this much, and many are likely to run short of funds at some point in their retirement.

This section assesses that likelihood. To do so, we will use two hypothetical examples from Hong Kong and Singapore – both based on necessary expenses – to illustrate how likely it is that a married couple will run out of savings/income at some point during retirement, based on a mix of invested assets specific to a retirement portfolio. Therefore, other aspirations related to retirement such as travelling, leisure and entertainment, fitness and healthcare upgrades etc. are not included.



[42] Based on their expected retirement age (63 years old) and the average lifespan in Hong Kong (85 years old) , savings of HK$3.97m translate into an average monthly disposable income of about HK$15,000 over 22 years of retirement. (Survey carried out in May 2020.)

[43] November 2018. For the magic number of how much retirement money one needs to retire in Singapore, there are various credible government and private retirement calculators and articles. Overall, most Singaporeans know it's above S$1 million, and about S$1.3 - S$1.5m. One article that uses the S$1.3m is here: https://www.straitstimes.com/business/need-13m-to-retire-depends-how-you-live

We've listed the full assumptions in the Appendix, but will highlight some key aspects here:

- The Hong Kong couple started saving at age 47. They are now 55, and will continue to invest 25 percent of their monthly income until they retire at 65. Their life expectancy is 85.[44]

- The Singaporean couple started saving at age 35. They are now 47, and will continue to invest 15 percent of their monthly income until they retire at 62. Their life expectancy is 83.[45]

- For each couple's investment portfolio (note that cash holdings are zero), the asset allocation within their investment portfolio does not change during retirement.

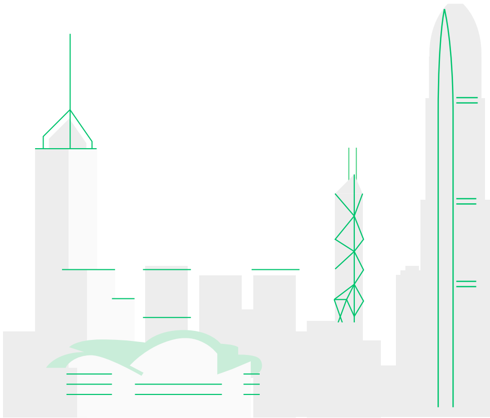
- Lastly, our modelling is based only on the cashflow from invested assets, and doesn't factor in other sources of "total wealth" like the couple's self-owned property or fixed assets, nor do we include other types of family or social assistance; in addition, returns are adjusted for inflation (the fact that costs are likely to rise in the future), but they're not adjusted for risks (the fact that some invested assets are more volatile than others).

[44] Hong Kong Census and Statistics Department 2018.

[45] As per World Bank estimates (2018)

A. Results of the simulations for Hong Kong and Singapore

Hong Kong



By the time our Hong Kong couple retires at 65, they will have built up investment capital of about

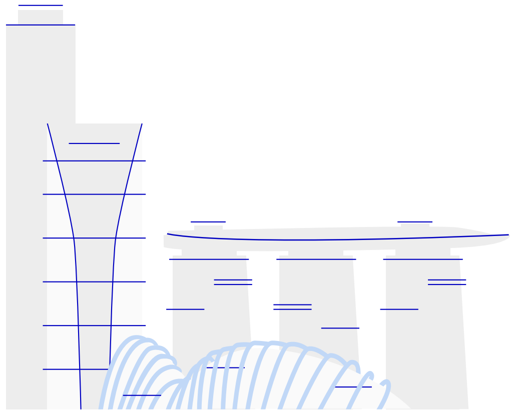
HK$6.6 million

(about US$850,000)

For illustrative purpose only

- Our calculations show that by the time our Hong Kong couple retires at 65, they will have built up investment capital of about HK$6.6 million (per couple, i.e. about US$850,000). While that seems substantial, the likelihood that they will run out of funds during their 20 years of retirement is 23.21 percent – that's a nearly one-in-four chance.
- Under an additional scenario outside the base-case, the probability of a shortfall would increase. In this case, the couple starts to de-risk their portfolio when they retire – rebalancing it from roughly 80 percent equity and 20 percent fixed income to 60 percent equity and 40 percent fixed income. Doing so means the probability of a shortfall rises to 26.98 percent.
- In a more active base case, i.e., if our Hong Kong couple starts saving four years earlier than we modelled (at age 43 rather than age 47), then the initial investing capital for the retirement portfolio will increase by 40% and the probability of a shortfall decreases to 8.25 percent.
- Also, the earlier the couple starts to invest, the lower the probability of shortfall, it's because with a larger investment capital hardwired for retirement portfolio, the more the couple could enjoy the power of compounding.

Singapore



By the time our Singaporean couple retires at age 62, they will have built up investment capital totalling

S$1.2 million

(about US$900,000)

- By the time our Singaporean couple retires at age 62, they will have built up investment capital totalling S$1.2 million (per couple, i.e., about US$900,000). The chance that they will run short of funds during their 21 years of retirement is statistically around zero percent.
- Should the couple start to de-risk their portfolio when they retire (from 59 percent equity, 13 percent property and commodities, and 28 percent fixed income – to 60 percent equity (alongside property & commodity) and 40 percent fixed income), the probability of shortfall is still around zero percent.

B. What the results tell us

The probability of a shortfall in Singapore is far lower than in Hong Kong, and we believe that's likely due to inflation, given that the difference in retirement pot for the Hong Kong couple and Singapore couple is only US$50,000. Based on historical data, we factored in general and housing inflation rates in Hong Kong and Singapore retirees' cost of living.[46] In the Hong Kong scenario, the general inflation and housing inflation rates are 3.02 percent and 6.83 percent respectively,[47] while in Singapore, the annualised general inflation and housing inflation rates are 1.56 percent and 2.78 percent respectively.[48] Should Hong Kong's housing inflation rate be the same as the general inflation rate (i.e., 3.02 percent), the probability of a shortfall would drop significantly from 23.21 percent to just 2 percent.

It's also important to note that the home-ownership ratio in Hong Kong is far lower than in Singapore (51.4 percent vs 90.4 percent[49]). As a result, Singaporeans have fewer concerns about rising housing costs than their peers in Hong Kong. Even though some investors in Hong Kong have some forms of wealth like a self-use property (fully or partially mortgaged) or an investment property, their cashflow could still be affected in a scenario where rates and management fees, for example, rise.

An additional note on medical costs

It's also worth remembering that medical and healthcare costs are not fully factored into the retirement spending in our simulations for both Hong Kong and Singapore. Although our Singapore model does include preventative healthcare costs and fees related to occasional visits to doctors, for example, chronic conditions were not considered. The amount that retirees in both markets require to create enough of a buffer to meet these needs remains uncertain.

That said, our retirement simulations do convey some important lessons, which we can also apply to other Asian markets to help more retirees and pre-retirees understand the steps they should take to better prepare for retirement. One also needs to be mindful of the persistence needed to achieve the saving goals to support retirement.

Our study also raises an important question about de-risking portfolios when approaching retirement. De-risking – or shifting some of the equity allocation into bonds – has been the standard approach for decades. However, the current low-interest environment means a portfolio comprising 60 percent equities and 40 percent bonds might not generate enough income.

As we saw above with our Hong Kong couple, de-risking their portfolio increased the probability of a shortfall. For that reason, investors might need to build up a larger capital sum than the Hong Kong couple managed before they de-risk and shift to a more conservative asset allocation approach.

Those with insufficient capital for that conservative approach must manage the challenge of lower yields. That isn't easy, with low bond returns and some equity markets at near-historic highs. What to do during pre- and post-retirement? One alternative is to remain longer in equities despite their higher volatility. Another is that investors assess options they might once have dismissed as less common, or stay invested for longer in the post-retirement period. It poses yet another conundrum for people, particularly for those who have retired or who are close to retirement, and is something we'll examine in detail in a subsequent paper.

[46] Indeed, based on the available government sources for the Hong Kong simulation, housing costs include rent (rates and government rent), management fees and other housing charges, while the retirement survey of a Singapore retired couple is based only on a minimum standard of retirement and listed purchases, with maintenance fees under the housing costs.

[47] Ratings and Valuation Department, as of 2019.

[48] Price index of HDB resale flats: data.gov.sg, as of third quarter, 2020. IMF, 10-year average inflation rate as of 2019.

[49] Table 005 : Statistics on Domestic Households | Census and Statistics Department (censtatd.gov.hk); Statistics Singapore - Households - Latest Data (singstat.gov.sg).

Conclusion: A holistic retirement solution

Retirement is "the time to reap one's harvest" – to benefit from a lifetime of hard work. However, as we've shown in this paper, the size of one's harvest is largely dependent on how carefully one plans for retirement, in both the pre- and post-retirement stages.

As we've seen, people in Asia who are investing for retirement often lack sufficient savings, prefer cash as an asset, and de-risk too early. All of these factors hamper their chances of building up sufficient wealth. In addition, they are likely to find that, once retired, health costs are among those that rise faster than the overall inflation rate, and they need to navigate a low-interest rate environment.

Given that retirees today are likely to live longer than their predecessors, preserving and growing a nest egg in the post-retirement period is essential. The key is to accumulate sufficient wealth prior to retiring – but not put those funds into cash savings after retirement, because inflation will over time erode them.

Our research shows that in order to hedge the growth of costs in the future, people should start saving early – and, most importantly, they should invest early.

As we've seen, there are two key reasons for this. Firstly, because the sooner one starts to save, the lower the probability of a shortfall. And secondly, because the sooner one starts to invest into an asset allocation portfolio, the lower the probability of a shortfall.

That underpins our core advice to avoid shortfalls in retirement:

- Start early, try to invest more, and don't be too conservative with your asset allocation – i.e., during the early years of the accumulation phase, invest aggressively, particularly in the pre-retirement years, in order to benefit from capital growth and dividends.
- Actively rebalance in a downturn.
- Beware of holding a lot of cash, rather, consider putting your savings into investments. We found that if the retired couple in Hong Kong withdrew the accumulated wealth in their portfolio when they retired and held it as cash, there was a 100 percent probability that their savings would be depleted in just over 12 years (149 months). In other words, it is essential to stay invested even after retirement.

Pre-retirees and retirees can best manage the shortfall challenges in uncertain times by focusing on the following five core areas to actively manage the accumulation phase – the years when you are building up your retirement portfolio – and the de-cumulation phase, when you start living off those funds.

1

Maximise your capital

The first, as we've seen, is to maximise your capital. That means staying invested for longer, and ensuring that funds that aren't needed today or tomorrow are placed where they can continue to grow and earn revenue.

2

Prudently draw down capital

Again, the more capital that can stay invested, the better. Cash currently earns close to zero (and erodes in real terms), and in our view that's unlikely to change in the coming years. In other words, draw down only what's needed for immediate spending needs.

3

Spending less; continuing to work

The third is a combination that involves: spending less; continuing to work if possible (even part-time); and finding out what government subsidies you or your spouse might be eligible for.

4

Seek out innovative solutions

Seek out innovative solutions to manage cashflow, like a reverse mortgage, or other income-generating solutions to provide enough cashflow during retirement years. Pre- and post-retirement, investors should also familiarise themselves with the range of innovative products and solutions that are available in their market in order to ensure a well-balanced portfolio.

5

Maintain and improve one's mental and physical well-being

And finally – and as important as any other – maintain and even improve one's mental and physical well-being. Countless studies show the importance of age-appropriate exercise, for instance in slowing the ageing process, while the COVID-19 pandemic has reinforced the importance of health and our relationships.

The number of ways to get fitter and healthier grows each year – often with the support of governments, which increasingly understand the benefits of keeping their populations healthy – and that opens more doors for retirees.

Whether it's walking, dancing, volunteering or engaging in one of countless ways with one's community, people's fitness and overall well-being are as important to enjoying their retirement years as having a large retirement fund. While saving and investing are crucial, so too are physical and mental well-being.

Appendix

When calculating how resilient the investment portfolios for each Hong Kong and Singapore couple were, we made the following assumptions:

- **Investor profile:** Both regions assumed households with married couples only. Investors in Hong Kong are 55 years old, which is ten years from the official retirement age of 65. Singapore investors are 47 years old, meaning they have 15 years before they can officially retire at age 62.[50]

- **Monte Carlo simulations:** Based on the income, savings and inflation assumptions in Hong Kong and Singapore, and by inputting the longest possible historical data of referenced asset classes (e.g. with equities and fixed income track records from 237 months/19 years to 447 months/37 years), we ran approximately 10,000 return simulations for each couple in the two markets to understand the likelihood of each retired couple experiencing a shortfall. In both cases, the amounts saved were not invested in the market until 2020 – in other words, at age 55 for the Hong Kong couple and age 47 for the Singapore couple. Both couples benefited from market returns only from 2020.

- **Investment portfolios:** We referred to a typical target-date portfolio in each of the two markets at the age of investing into the portfolios; we assumed the allocation remained unchanged throughout the investing years;[51] both portfolios were adjusted to be fully invested (without cash); investors stayed invested after retirement. (See footnotes for more.[52] [53])

[50] Hong Kong investors enjoy 20 years of post-retirement life while those in Singapore have 21 years (according to the life expectancy in each market).

[51] The asset allocation weightings for both markets remain unchanged throughout the investment period, by ascribing the current glide path of the reference target-date portfolios.

[52] Based on a hypothetical diversified portfolio in the market for a retiree target to retire in 2030, the above asset allocation is for illustrative purposes only and does not represent the actual investment.

[53] Based on a hypothetical diversified portfolio in the market for a retiree target to retire in 2035, the above asset allocation is for illustrative purposes only and does not represent the actual investment.

- **Retirement costs:** The Hong Kong cost model is based on average household monthly expenditure for a retired couple, while the Singapore cost model is based on the minimum standard for retirement in Singapore.[54] Retirement-cost projections have been adjusted to allow for inflation and house-price increases. The general cost of living is likely to increase over the years, therefore we considered inflation in the cost projection.[55] In both markets, we adopted a budgeting approach to show the basic cost of living for each retired couple, excluding lifestyle preferences or other aspirations. See household costs breakdown [54, 55]:

Hong Kong (monthly basis)

Essential	2020 (HK$)
Food	4,691
Clothing and footwear	405
Public transport	1,105
Housing	9,261
Utilities	520
Household durables	352
Essential expenses total	16,334
Non-essential	
Alcoholic drinks and tobacco	77
Miscellaneous goods and services	2,636
Non-essential expenses total	2,713
Total (Monthly)	**19,048**

Singapore (monthly basis)

Essential	2020 (S$)
Food	837.46
Health	153.31
Clothing and footwear	118.09
Public transport	203.13
Housing	194.52
Utilities	81.95
Household durables	78.64
Household services and supplies	24.45
Medical products	4.45
Communications	57.19
Personal Care	155.74
Insurance	0.04
Essential expenses total	1,909
Non-essential	
Recreation and entertainment	373.17
Newspaper, books and stationery	0.31
Holiday expenses	87.02
Personal effects	18.67
Non-essential expenses total	479
Total (Monthly)	**2,388**

For illustrative purpose only

[54] Hong Kong: 2014/15 Household Expenditure Survey and the Rebasing of the Consumer Price Indices. Singapore: What older people need in Singapore: A household budgets study.

[55] Food, transportation and clothing etc. tend to move in accordance with the CPI, while housing costs may increase at a faster rate as highlighted in section two. Therefore, we included a housing price adjustment. Moreover, Hong Kong's data does not highlight medical costs in the household budget as a separate item, therefore we keep medical cost projections consistent with that of inflation.

- **Investment capital:** Based on desktop research and available insights, it is assumed that investors would save 25 percent and 15 percent of their monthly/annual income for retirement purposes in Hong Kong and Singapore[56] respectively. Regarding monthly income levels, we took the 75th percentile and median incomes respectively for Hong Kong and Singapore[57] as the basis for our investment-capital calculation, i.e., how much they would have saved by the ages of 55 and 47, depending on their market (with salary growth adjusted by considering the inflation rate, all in local currency terms).

- **Returns:** The modelling considers only cashflow from invested assets, and not from each couple's "total wealth" – for example, their family residence. In addition, while results are adjusted for inflation, they are not adjusted for risk – the fact that some invested assets are more volatile than others.

[56] Manulife Hong Kong Survey 2020. Singapore reference, see: https://www.moneyowl.com.sg/articles/how-much-do-i-need-to-retire-in-singapore-and-how-do-i-build-my-retirement-income-stream/

[57] Government statistics.

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A widespread health crisis such as a global pandemic could cause substantial market volatility, exchange-trading suspensions and closures, and affect portfolio performance. For example, the novel coronavirus disease (COVID-19) has resulted in significant disruptions to global business activity. The impact of a health crisis and other epidemics and pandemics that may arise in the future, could affect the global economy in ways that cannot necessarily be foreseen at the present time. A health crisis may exacerbate other pre-existing political, social and economic risks. Any such impact could adversely affect the portfolio's performance, resulting in losses to your investment

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