Policy Analysis Exercise (PAE)

Policy Options For Addressing Long-Term Care (LTC) Financing in Singapore

For

The Gerontological Society of Singapore

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13 April 2018

Executive Summary

This study investigates policy options for addressing Long-term Care (LTC) financing in Singapore. Given an increasingly aging population and a declining old age support ratio in Singapore, finding an optimal policy mix to fund LTC sustainably is a matter of urgency. In this study, we focus on policy options for sustainable funding support of severe disability. Severe disability imposes large actual and implied costs on governments and caregivers.

We recommend that the funding of severe disability should weight towards a nearly equal mix of savings and future expenditure. The savings should come from individuals and the government. For the government, the aim should be to transfer from future expenditure, paid for by working age people to the elderly, to a more sustainable current expenditure, paid by the same generation that will use the benefits eventually. This will allow the government to reduce future subsidies funded from taxes. The government may not have to spend significantly more than it currently plans to, adjusting only the timing of the expenditure.

We conducted primary research using structured interviews of 15 pre-retirees to learn about how these individuals perceive ElderShield, housing monetization, and their preferences in old age. We also interviewed a dementia care expert for that person's views on dementia care.

Based on our findings, we have two recommendations. The main one uses our findings to target a significant increase of both basic and supplementary coverage for ElderShield and includes the provision of dementia cover.

Our primary research also unearthed some insights into pre-retiree's preferences in housing monetization, which we have turned into suggestions for future research. This is documented in our analysis in appendix 7.

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1 Introduction

1.1 The problem

Singapore currently has about 5.1 working persons to 1 older person aged more than 65 (Department of statistics Singapore 2016). By 2050, this could change to between 1.7 working persons per older person, if there is no net inbound migration (Yap & Gee 2014). This is consistent with trends in the developed world with, for example, Japan, Germany, and South Korea projected to have 1.2, 1.6, and 1.5 working persons per older person by 2050 (OECD 2011c).

Much of the health and long-term care systems in developed countries are based on inter-generational funding. The current generation of tax payers contribute to a fund or taxes, which then goes to pay for the care of the elderly. Most of these systems are under strain from cost pressure or have adopted a social compact of high contributions or taxes as being necessary. The OECD spent an average of 1.7% of GDP on LTC in 2015 with an average annual real growth of 4.6% in expenditure in the 10 years prior to 2015 (OCED 2017). The systems in these countries are already under strain, showing no signs of abating. As their working age population shrinks relative to the elderly population, this will not be sustainable.

Singapore is not spared from similar problems of supporting growing needs with a shrinking tax base. Much of existing government support for old age severe disability lies in means tested subsidies, for example, for nursing care. This is effectively funded from the current working population, whose numbers relative to the elderly are set to decline sharply in the near future.

The government has made a deliberate shift toward more social spending. In DPM Tharman Shanmugaratnam words, "*But it's really in the last decade that you see a decisive shift, a*

deliberate tilt, towards tempering the inequalities of life and ensuring the lower income group keeps pace with the whole society as it moves up." (Shanmugaratnam 2018).

The evidence of this shift is in the numerous public policy announcements in the last several years on social support infrastructure, including most prominently, the Pioneer Generation package. Mr Shanmugaratnam also acknowledges that spending will have to continue to go up. The 2018 budget statement by the Ministry of Finance of Singapore underlines this with a declaration of a Goods and Services Tax increase in the next decade, with healthcare and the ageing population spending quoted as a major factor (Ministry of Finance 2018).

We have an existing mechanism to prefund and risk share severe disability costs in the ElderShield long-term care insurance. However, its pay outs are low, and it does not support dementia. It is estimated by a recent study that as many as 10% of the population over 60 may have some form of dementia. Dementia is a problem impacting both patient and caregiver early on, even if patient is able to perform activities of daily living.

1.2 Our client

Our client is the Gerontological society of Singapore. Founded in 1986, the society is a group of academics, geriatricians, psychiatrists, social scientists, physiotherapists, and other professionals, who would like to bring positive changes to the older person community through providing a platform for networking and knowledge sharing. They are also a special interest group whom the government consults for matters relating to older persons. There is a desire to identify policy options for LTC financing for older persons, which they think currently inadequate. Furthermore, our client has expressed concern about the lack of support for dementia, and some asset rich but cash poor older persons' inability to manage their finances.

1.3 Strategy

The financing of long-term care can be taken care of before the onset of dependency (ex-ante), or after (ex-post). We use this division throughout this report.

We show that a roughly equal funding mix between ex-ante and ex-post is consistent with the practice in many developed countries and is frequently in parallel with how the healthcare system is funded. A balanced mix is also consistent with the way Singapore funds its healthcare. An increase in ex-ante funding will also likely avoid sustainability issues with increased inter-generational funding as our population ages and is also likely to be acceptable to the public, if properly explained.

We do not need to invent a new system for ex-ante financing, such as social insurance, as a mandatory ElderShield can achieve much of the same objectives, including any social equity considerations. The government does not have to spend significantly more overall as expenditure on ElderShield can be counter balanced by a reduced emphasis on subsidies (ex-post finance).

We also investigate possibilities for housing equity release, as an ex-post financing option. Housing, more so than other countries, is effectively a part of our retirement savings. "*Singapore is the country where roofs and retirement have become two sides of the same coin.*" (Reisman 2007).

1.3.1 Ex-ante financing

Many countries with long-term care programmes take care of ex-ante financing with some form of social insurance programme, independently, or as part of their health insurance system. Singapore does not have a social insurance programme for LTC.

Private LTC insurance could be a suitable alternative. It has problems that can be largely overcome if it is universal and its claims criteria reduces likelihood of over servicing (Frolik 2015). Singapore is unique in the world that it has an almost universal long-term care insurance (ElderShield), needing only a small step to turn it universal. ElderShield also has a simple and strict criterion for claims and pays in cash, making it harder to over service and over consume. One goal of social insurance is in supporting social equity. This can be done via premium subsidies in ElderShield, targeting lower income individuals directly. We do not need to invent a new mechanism for ex-ante funding.

Our literature review shows that in OECD countries, most countries try to even out ex-ante and ex-post financing, and in most cases, parallel how they fund healthcare (Costa-Font et al. 2015). Singapore's 3M system for healthcare is heavily precautionary in contrast with ElderShield400 which pays a limited $400 a month. The government's position is that there is no free lunch in healthcare - a balance has to be made between individuals, family, insurance and government spending to ensure sustainability (Shanmugaratnam 2018). The balance is not there for severe disability care.

We will show that the current nursing care subsidies that the government offers covers about 73% of existing households with at least one member aged 65 or older. This will become untenable once the flood of older people doubles or triples.

The Institute of Policy Studies conducted a survey in 2017 on the public's attitudes toward inter-generational funding (Gee et al. 2018). The proportion of people who believe that each generation should take care of themselves almost equalled the proportion of people who believed the opposite. We believe the public may not be opposed to a balanced funding mix if it is properly explained.

1.3.2 Ex-post financing

We also investigate releasing housing equity for old age as a type of ex-post financing. Singapore is unique in that we have a more than 90% home ownership rate, funded substantially from retirement savings. This means that housing is effectively a form of retirement savings.

We may have over consumed our housing (Reisman 2007; Cardarelli, R. 2000). Singaporeans enjoy 258 square feet per person in living area compared with 161, 140, and 75 in Tokyo, Seoul and Hong Kong respectively (Reisman 2007), nearly all owned. In 2016, the average CPF balance of persons aged 50-55 was $137,000 (CPF 2016). In a reply to questions in Parliament in 2014, Mr Tan Chuan-Jin said that only half of CPF members met their minimum sum pledge at age 55, inclusive of their property pledge (Tan 2014). At the end of 2017, net withdrawals from the CPF for housing amounted to S$210 billion (CPF n.d.). One study by the OECD concluded that the CPF would fund between 13% to 82% of one's pre-retirement income, depending on how much was withdrawn from CPF (OECD 2008).

Our retirement adequacy could go way up if we could monetise our housing assets. This is important as a supplement to any LTC needs, but also as income as we know that low stress in retirement life is preventative for disability and frailty (Yong et al. 2010; George et al. 2014; Buckinx et al. 2015).

1.4 Primary research

Our research focused on pre-retirees aged 40 to 55. We wanted to find out their experiences and knowledge of ElderShield, housing monetization options and preferences, knowledge of government schemes, and preferences for old age. The current cohort of older persons are covered by existing policies, such as the Pioneer Generation Package, which are unique to the cohort. The pre-retiree cohort may have less children, better education and different opinions

about retirement arrangements and financing options. We are aiming recommendations at this cohort.

1.5 A summary of our conclusions

The main recommendation is to increase ElderShield coverage. We illustrate this recommendation with 4 pathways to achieve this. We also have a second recommendation that focuses on the lack of awareness that pre-retiree individuals have on matters relating to old age, housing monetization, and government schemes.

An implication of the main recommendation is that since the government shifts its spending from future to today, the current subsidies it has will need to be revised to bring back a suitable mix of out of pocket funding, funding from savings, and tax revenues, given the 50:50 funding mix target, and also take into account transitional issues such as existing enrolled members of ElderShield when policy is rolled out.

The main recommendation, with its four pathways, can be briefly summarised as follows:

- Protect basic premiums and the Medisave Withdrawal Cap from LTC cost inflation by increasing the premiums and caps annually according to inflation.
- Make ElderShield Mandatory. Increase the basic premium to an average of $270. Have the government make matching premiums for 50% of each cohort.
- Support Dementia with an insurance rider or as a separate insurance policy with basic premiums of $38 a year, and government matching of premiums in a similar way as with the basic ElderShield premiums.
- Raise the Medisave Withdrawal Cap to $1000 from $600 to behaviourally nudge better off individuals to raise their supplementary ElderShield coverage.

The areas which we suggest for further research target housing equity monetization (the first 3) and LTC labour supply (the last). It is informed by our primary research findings and discussion with our clients.

- Finding out how to make it more attractive for people to downgrade.
- Exploring innovative products for housing monetization.
- Relaxing regulations on older HDB flats.
- Starting a nursing internship scheme for suitably qualified foreign domestic workers.

2 Review of LTC Financing

2.1 Definitions of LTC and disability

The definitions of LTC and disability are fluid. The OECD, Eurostat and WHO position in defining long-term care "as a range of services required by persons with a reduced degree of functional capacity (physical or cognitive) and who are consequently dependent on help with basic and/or instrumental activities of daily living (ADL) for an extended period of time (Wittenberg 2016). Basic Activities of Daily Living (ADL) or personal care services are frequently provided in combination with help with basic medical services such as nursing care, prevention, rehabilitation or services of palliative care. Instrumental Activities of Daily Living (IADL) or assistance care services are mostly linked to home help". The devil is in the details. What services exactly? How to define disability consistently? Even the meanings of ADL or IADL vary with country. Also, many surveys on disability are based on self-reporting, therefore different social norms about reporting disability can cause variation. In the studies done by OECD in 2007, European Commission in the years of 2009 and 2011, we see the long-term care definitions and spending in the broader context.

2.2 LTC Financing Framework

Overall, long-term care expenditure is measured through aggregating long-term care social services and long-term health care services (Halásková et al. 2017). When it comes to financing LTC, our review of the literature shows us the general outline where the structure of long-term care services and financing systems diverge noticeably among countries.

The variations in LTC care and financing systems reflect "differences in care needs, in the structure, and comprehensiveness, of formal LTC systems, as well as in family roles and caring cultures." (Colombo et al. 2011). Various sources show that people prefer to receive care in

their homes. However, the main part of LTC cost emerge from the institutional sector, in which public sources are the main origin of funding. As for welfare gains, they are provided either in the form of cash or in-kind annuities. "Cash benefits may either be granted to the family carer, or to the care recipient, allowing more choice regarding the services needed." (Colombo et al. 2011). In OECD, long-term care financing varies across several dimensions among high income countries that depend on "how much of the economy is spent on long-term care, the extent to which care is publicly or privately financed, whether public programs are means-tested or provide universal coverage, whether responsibility for long-term care is a national or state and local government responsibility, and how the relationship between medical and long term care is defined." (OECD 2011a).

Long-term care financing options in the European Union are based on social insurance, tax-based public systems (either universal or means tested), and private insurance. In the policy context of the European Union, each of these financing options has certain advantages and disadvantages. The outstanding convenience of private insurance approach is that it is theoretically neutral for the public budget (Rodrigues 2014a). On the other side, disadvantages include the limited tax base capacity and difficulties in risk-assessing.

The positive aspect of social insurance is that it creates an explicit entitlement to benefit, which contributes to transparency and less stigma. Other advantages include predictable and reliable revenues, income-related affordable contributions, and no waiting period, given that it is pay-as-you-go. The negative aspect of this financing option is again limited tax base capacity and rigidity in benefits awarded.

The third financing option, which is the tax based system, has a broader tax base capacity and greater flexibility in awarding benefits. Moreover, if it is pay-as-you-go, there is no waiting period. On the other side, the major disadvantage of this financing option is less transparency

in allocation of benefits. Moreover, there is no direct link between revenues and benefits. Also, there is a possibility of having an implicit debt if it is pay-as-you-go.

Long-term care financing options and other wide-ranging instruments in financing LTC services are further examined by (Costa-Font et al. 2015). In the need to finance LTC services, they classify and distinguish major institutional responses as ex ante (before the need arises) and ex post (after the need arises).

In various sources, generally, savings and insurance are considered as ex-ante financing approach. Two major kinds of insurance under the ex-ante approach are social insurance and private long-term care insurance(Costa-Font et al. 2015). As for savings, they point out the precautionary saving approach while tax-based financing, self-based financing (primarily equity release), and family support are part of the ex post long-term care financing options.

One major concern is that most of the LTC policies and practices do not rely on sustainable construction prior to facing problems but rather responding to immediate financial or political problems. With all this, the future of long term care financing concerns various countries because there will be more demand, higher expectations and thus more spending.

Thus, there are only a few major forms of policy tools to support funding of LTC. They are:

- General Taxation
- Social insurance contributions or earmarked taxes
- Private long-term care insurance
- Housing equity release

2.2.1 General Taxation

Funding LTC using government income from general taxation draws funding from a wide economic base and is socially equitable. Decisions about when and how to spend the funding can be made flexibly at time of need (Rodrigues 2014a). However, it transfers wealth from the current generation of tax payers to a mostly economically inactive older population, i.e. "Inter-generational" transfer. With an increasingly reduced old age dependency ratio, this mode of funding can put a lot of strain on the working population and on an increasingly inflexible public budget.

2.2.2 Social Insurance contributions or earmarked taxes

Social insurance contributions or earmarked taxes funds LTC through universal social contributions. Payments are determined by criteria such as income (e.g. payroll taxes) or consumption (e.g. cigarette taxes), while benefits are typically progressive according to the means and need of the individual and may be in kind or in cash. This pay as you go (PAYG) scheme limits the tax base to wages or specific consumption and involves inter-generational transfers.

A stated benefit of social insurance funding is transparency because one's payment is often pegged to the benefits accordingly to predefined rules (Rodrigues 2014a). There are, however, concerns about the sustainability of such schemes in the OECD due to expenditures growing much more rapidly than revenues (Colombo et al. 2011). Potential moral hazard may lead to over consumption of LTC, especially when the benefits are in-kind. Difficulty in projecting accurate future need results in frequent changes of benefits or contributions (Colombo et al. 2011; Fukui & Iwamoto 2006; Hussem et al. 2016; Rodrigues 2014a). Demographic trends further threaten the sustainability of this type of funding method.

2.2.3 Private Long-Term Care Insurance (LTCI)

Private LTCI funds LTC through risk-pooling, and is often not mandatory. LTC insurance is usually claimed by people over 65+, and the costs of disability range from zero (not disabled) to very high for a significant minority. Risk-pooling leads to wealth being transferred between individuals with different risk outcomes.

Private LTCI is attractive for policy makers because it does not affect inter-generational equity or public budgets. It, however, limits the ability to manage social equity since pay outs are linked to premiums. There are also difficulties in estimating the cost and likelihood of disability, moral hazard or adverse selection, leading to disproportionate premiums or lesser benefits especially if the benefits are in kind, not cash (Rodrigues 2014a)(Frolik 2015)(Costa-Font et al. 2015).

Only a few countries have "high" levels of adoption of private LTCI: France (20% of population), US (10%) (Costa-Font et al. 2015) and Singapore (>90%). Singapore has a universal "opt in" by default insurance scheme with nearly all individuals signed up for basic coverage. In the US, the market is generally regarded as not growing for the following reasons (Frolik 2015; Rodrigues 2014b):

- Highly subsidised Medicaid crowds out private LTCI;
- Adverse selection by higher risk persons lead to higher premiums;
- Moral hazard in which the conditions of claim may incentivize claims to be made more than necessary.
- Despite well demonstrated reasons that buying protection is rational, purchase of LTCI is subject to behavioural biases that deter its purchase.

The lesson from this is that LTCI should be as universal as possible to avoid adverse selection. There should be a mutual exclusion between LTCI and public schemes so as not to crowd out LTCI. The claims process should be as simple as possible and probably involve a fixed cash benefit to avoid moral hazard. Lastly, there should be careful study made as to how to better present and publicize LTCI to mitigate behavioural biases.

2.2.4 Housing equity release

The phenomenon of retirees having a large amount of wealth in housing is well-studied in retirement literature. In the US, Europe and Japan, home ownership reaches about 31%, 64%, 80% respectively (Poterba et al. 2011; Noguchi 1997; Chiuri & Jappelli 2010). In the case of Singapore, more than 90% of Singaporeans own their own homes, and Singaporeans aged 50+ hold 75% of their total wealth in housing (Reisman 2009).

Despite making a rational economic sense, and its importance as an asset class, housing equity release is not as significant as it could be in financing retirement (Chiuri & Jappelli 2010; Jefferson et al. 2017; Fornero et al. 2016). One factor is risk aversion (Jefferson et al. 2017) relating to home owners' anxieties about uncertainties, such as longevity risk, interest rates risk and property price risk. Another might be the reservation of housing as a precautionary savings vehicle (Rouwendal 2009; Chia & Tsui 2005). The desire to leave a bequest may not be a significant factor in other countries in studies that look at stated intension versus behaviour (Jefferson et al. 2017).

The duration of housing instrument used often aggravate the above risks. In other words, the risk for someone who takes out a reverse mortgage immediately on retirement is much higher than the risk for someone who takes it when he is much older and needs it for nursing needs.

Current forms of housing equity release include:

- Reverse mortgages (may be known by a variety of names): Taking out a loan using the house as collateral. Policy holders usually continue to stay in the house and pay the estate to bank after death.
- Selling/Downgrading: Selling current house, moving to cheaper living arrangements and keeping the difference in prices.
- Home reversion: individual sells a part interest of his/her home but can live in the house until death or he vacates the house.
- Subletting a part of the house to tenants.

From a policy maker's point of view, the last option offers little scope for policy action. The reverse mortgage is subject to longevity, property price and interest rate risk, and is unpopular (Goh 2014; Chiuri & Jappelli 2010; Jefferson et al. 2017). Though selling is less risky, it may offer relatively less equity released as one still has to buy a smaller house, and individuals face the prospect of stressful change (Huan & Mahoney 2002). A home reversion product is where an investor buys a part share in a home owner's property. However, the home owner can continue to live in the property until it is sold. There is no explicit interest cost, but the investment return is built into the lump sum paid for the fractional ownership.

In equity release products, policies usually revolve around protecting both the consumer and the bank with guarantees or regulation. For example, in the US, the federal government guarantees the balance of reverse mortgage loan. Financial counselling is usually mandated. Transaction costs may be reduced, or incentives may be offered.

2.2.5 Cash versus In-Kind benefits.

Many OECD countries have both in-kind and cash benefits to achieve flexibility and reduce moral hazard (Colombo et al. 2011). Cash benefits can be flexibly given to the carer or recipient and used in any way that is most beneficial (Colombo et al. 2011). In Germany, cash benefit for informal caregiver is widely popular, despite the amount of benefit being less than that of in-kind benefit (Fernandez & Nadash 2016). Furthermore, the fluidity of the definition of

disability invites moral hazard, especially when the benefits are in-kind. Over consumption can arise from the difficulty in accessing individual conditions accurately and continuously. Even with cash benefits, the opportunity for moral hazard still exists, unless the testing criteria are made very strict, which may mean gaps in coverage for people in need.

A recent study (Lieber 2017) conducted in the United States, using a natural randomized experiment of 3 Medicaid implementations in 3 different states, estimated that a recipient valued in-kind provision of Medicaid service at 28% of its cost. The study also asserts that in-kind provision targets benefit into the hands of those who most need it – in other words, cash benefits can leave gaps in coverage of those who need it, as a "trade off" even as they are simpler to implement. A culprit fingered is the lack of information. However, we find the argument of cash versus in-kind to be more tilted in favour of cash, given the large differences in utility for cash versus in-kind. Also, in the Singapore context, which is information rich, issues in targeting are probably minimized given a specific policy focus.

In general, cash benefits are not only easier to administer, but also allow recipients to freely choose the service they need or compensate their informal carers. It is more market based, provided information failures are minimized, and does not entrench government run or government selected service providers. The benefits are also more transparent and easier to quantify to the public from a policy perspective.

2.3 LTC Policies in Practice

After discussing individual policy tools, this section provides an overview of how mixtures of policy tools are used by different countries to address their LTC funding needs.

11 of the OECD countries have "universal coverage", meaning a single national programme that funds LTC. 4 countries have no formal LTC policy, or else it is integrated into their

healthcare policy system (Belgium, Poland). Notably, the US and the UK have a means-tested safety net which only means-tested individuals are accepted for benefits. Others have mixed systems, some of them devolved to their provinces or states. Singapore has some elements of LTC services integrated into the healthcare system and has only one specific and nearly universal LTC scheme in the ElderShield long term care insurance run by private insurers. Hong Kong has a patchwork of assorted services to deal with the older population, with no real LTC policy system (Chung et al. 2009). In 2015, Taiwan starts offering universal coverage of mostly in-kind services provided via a network of care organizations under contract with the government (Ferry 2017).

For in-kind benefits, given the intricate character of the vulnerable senior people and their needs, the combination of health care, social services and housing is acknowledged as a primary variable in drafting and administering effective and useful long-term care systems (World Health Organization 2003). All developed countries experience problems such as inadequate arrangement, lack of progression and difficulties in controlling costs in their LTC management and funding. On the other hand, according to (KPMG International 2013), integration also has some risks. One of them is an excessive reliance of patients on a single care provider as a result of integration policies. Such concerns can be allayed to some degree by demanding integrated providers to offer choice. Also, through an attentive monitoring of patient satisfaction and other performance measurements. Overall, there is not a single way of dealing with the situation currently. A cash based benefits system would not have these particular concerns.

The table below documents the sources of LTC funding(Costa-Font et al. 2015). The figures generally accord with other sources though the number for “Private Insurance” for France looks low.

Figure 1 Sourced from (Costa-Font et al. 2015)

Organisation for Economic Co-operation and Development (OECD) countries' sources of *ex ante* and *ex post* funding of long-term care

Country	Social security funds	Private insurance	Total *ex ante*	Tax funded	Household out-of-pocket expenses	Other	Total *ex post*
Switzerland	27.1	0.4	27.5	11.7	58.4	2.4	72.5
Portugal	51.4	1.1	52.6	2.0	45.4		47.4
Germany	54.7	1.7	56.4	12.5	30.4	1.4	44.3
Spain	10.2		10.2	61.7	28.1		89.8
Slovenia	57.1	0.5	57.6	18.3	24.0		42.4
Korea	30.7		30.7	46.2	17.8	5.3	69.3
Austria	0.7		0.7	81.1	17.1	1.0	99.3
Canada	0.4	0.4	0.8	81.6	16.8	1.6	100.0
Finland	7.6		7.6	77.2	14.2	2.0	93.4
Estonia	39.3	0.1	39.4	48.2	12.4	0.1	60.6
Norway				89.3	10.7		100.0
Denmark				89.6	10.4		100.0
Australia		0.3	0.3	88.9	8.5	2.3	99.7
Japan	44.8	4.0	48.7	44.2	7.1		51.3
New Zealand		1.3	1.3	92.0	4.4	2.3	98.7
Hungary	30.2	0.9	31.0	60.1	2.4	6.4	68.9
Sweden				99.2	0.8		100.0
France	54.4	1	54.8	44.8	0.4		45.2
Poland	49.2		49.2	43.1	0.3	7.4	50.8
Belgium	58.7	9.8	68.5	31.4	0.2	0.0	31.5
Iceland	60.6		60.6	39.4			39.4
Czech Republic	69.5		69.5	30.5			30.5
Netherlands	90.4		90.4	9.5		0.2	9.7

Source: OECD Health Data, 2011.

As previously mentioned, ex-ante funding has an issue with accurate forecasting of needs, is transparent, and avoids inter-generational transfers in the case of private LTCI. General taxation allows for flexible application of funds to changing needs but may be subject to budgetary pressures. Finally, significant household out of pocket expenditures may be necessary to help avoid over consuming LTC services. From the table, the most common arrangement appears to be very roughly an equal split between ex-ante and ex-post funding sources.

At the moment, Singapore has zero in the social security column, a small plus in the private insurance column with most expenditure likely to occur in the tax funded or out of pocket columns. As an additional complication, by policy, Singapore has encouraged over 90% homeownership by allowing citizens to draw on their mandatory contribution retirement funds. Home equity may thus be considered an important (though technically out of pocket) prefunded

source for LTC consumption if it can be released. By strengthening private insurance, which already has nearly 100% enrolment in Singapore, we can get the equivalent of a social insurance scheme, albeit without means tested benefits, and without inter-generational equity issues. Releasing housing equity can serve as an ex-post source of funding (from LTC point of view), along with taxation for flexible funding of LTC needs.

2.4 Selected Country Reviews

International comparative data on long-term care systems are often published in widely scattered sources and can be difficult to obtain. Also, in literature review, we find evidence of long-range planning mainly in industrialized countries. Unfortunately, it is seen to be lacking in developing nations for now.

In studying systems of financing and administering long-term care, making international comparisons is one of the ways to analyse the optimal design. Thus, we reviewed industrialized countries carefully because of their developed LTC systems, successes in the provision and financing of the LTC policies.

The countries we studied include: The Netherlands, Germany, Norway, Japan, and South Korea. For separate country profiles, please refer to the appendix.

Our studies help us conclude that international long-term care policies range in financing systems. The key factors that cause those differences are individual and unique history, politics, and cultural values. The analysis of long-term care financing systems more generally shows that in most countries financing is diversified that involves various available sources, that is, local and national taxes, social security and private sources. Private sources mainly project itself through the beneficiary's resources because, as seen, there is a limited role for private insurance, particularly in Japan and South Korea. In Japan and South Korea, unlike the Dutch

and German systems, there is mainly in-kind benefits. Cash benefits are given when there is an exceptional case. Moreover, with further analysis based on the literature review, we see that the financial management of long-term care is projected to more than double because of demographic changes. This is the key factor that affect many public expenditure programs and consequently long-term care financing reforms that took place in countries like the Netherlands and Germany in the years of 2015 and 2017 respectively.

There is no doubt that making international comparisons is a good way to analyse the optimal design in financing and administering long-term care. However, we have to be wary of (1) inappropriately imposing models from other countries, and (2) failing to make use of the indigenous, local resources that may be rallied in the provision of long-term care. These two points have to be avoided for an understanding of the specific nation or culture being studied.

3 LTC in Singapore

3.1 LTC Funding Mix

In Singapore, explicit funding vehicles for LTC are ElderShield, a LTC insurance currently operated by private insurance and regulated by the government, and an array of subsidies for specific LTC needs. The healthcare system also provides some LTC services, especially services related to acute conditions. As a result, the "3M system" of Medisave, MediShield and Medifund that finances healthcare in Singapore funds parts of LTC. The sections below summarize the existing funding mechanisms that cover LTC costs for Singaporeans.

We examine the existing funding methods for both healthcare and LTC, to highlight the unbalanced funding mix in LTC. While healthcare is funded by a comprehensive and well-balanced system of ex-ante funding methods including risk-pooling, pre-cautionary savings and endowment funds, LTC is still heavily funded by tax-based subsidies. We argue that having a balanced LTC funding mix is a determining factor for the government to successfully address the demographic challenge eventually.

3.1.1 Healthcare Funding Mechanisms

3.1.1.1 Ex-Ante Funding Methods

- Medisave—Precautionary Savings

Medisave is part of the compulsory individual saving scheme, Central Provident Fund (CPF), contributed by all workers and employers monthly. CPF contribution rate for employees below 55 years old is 37% of monthly wage in total, with employees contributing 20% and employers contributing 17% of their wages; the amount that goes to Medisave ranges from 8% to 10.5% of monthly wage based on age.

Money in Medisave can be used for hospitalization, selected outpatient treatments, preventive care and premiums of approved insurance plans. Dollar limits of usage are defined based on subsidised, basic healthcare services (Lai 2016).

- MediShield Life—Universal Insurance

MediShield Life is a basic, lifelong and universal health insurance scheme administered by the CPF board. Annual premiums increase with age groups, starting from below SGD 200 for age 30 and below, to SGD 1530 for those age above 90. Several premium subsidies were introduced at the same time as MediShield Life, to ensure smooth transition and universal coverage for the low-income group and for the Pioneer Generation (MOH 2015d).

Coverage of hospital bills for basic healthcare facilities and specific outpatient treatment claim limits, with maximum claim limits per policy year of SGD 100000. There is no maximum lifetime claim limits and no maximum coverage age. Co-insurance payable by insured ranges from 3% to 10% based on bill size; deductible payable by insured ranges from SGD 1500-3000 based on ward class (MOH 2015b).

- Medifund—Endowment Fund

Medifund is an endowment fund set up to fully fund bills for those who are not able to pay for their healthcare after subsidies and basic insurances. Interest from the principle sum is available for use each financial year. The government tops up the principal fund in years with budget surplus. Money in Medifund can be used by individuals in need to pay for deductible and co-payment of basic hospital bills (Lai 2016).

- Integrated Shield Plan—Private Insurance

As riders of MediShield, IPs are operated by private insurance companies, regulated by the Ministry of Health, for hospital bills of higher class wards and private hospitals. Medisave can be used to pay for the premium within a limit, for IPs which renewability is guaranteed by MOH. IPs cover of hospital bills in Class A wards and private hospitals. Premiums can go up to about twice or three times of that of MediShield Life (Lai 2016).

- Other Private Insurance Plans

There are other insurance plans operated by private insurance companies, including those covering the entire deductible and co-insurance, or purchased by employers for employees. Full coverage tends to encourage excessive claims which increases the premium. Usage varies by policy coverage.

3.1.1.2 Ex-Post Funding Methods

- Subsidies—Tax-based transfer

Subsidies are given to individuals using healthcare services on a means-tested basis. Means-testing is conducted through evaluating applicant's monthly household income per capital using either the gross income of each person in the household or the annual value of place of residence for households with no income (MOH 2015c).

Basic inpatient care, specialist outpatient care with referral from primary care, general practitioners and dental clinics under the Community Health Assistance Scheme are subsidized for mid to low income individuals. Polyclinic and emergency services are subsidised for all Singaporeans (Lai 2016).

3.1.2 LTC Funding Mechanisms

3.1.2.1 Ex-Ante Funding Methods

- ElderShield—Private Insurance

ElderShield is the explicit LTC insurance currently operated by private insurance companies. There are two components to ElderShield: the basic ElderShield, of which Singaporeans are opt-in by default, and supplement plans which individuals can choose to opt in. From age 40 to 65, all Singaporeans are to pay annual premiums varying from $174 to $217 based on age and gender. Supplemental ElderShield schemes provides additional coverage of up to 3000 dollars per month for a lifetime, with annual premiums up to 1.8k. (MOH 2014a). The premium for ElderShield supplement can be paid by Medisave, subjected to a cap of $600 per insured person per calendar year (MOH 2016).

Cash pay-out of $400 per month is claimable for a maximum period of 72 months upon the onset of severe disability, i.e. unable to perform at least three out of the six activities of daily life (ADL) including eating, bathing, dressing, toileting, transferring and continence.

- Medisave

Under the Chronic Disease Management Programme (CDMP), Singaporeans can use Medisave to pay for outpatient medical bills of 19 chronical conditions including diabetes, stroke and dementia. Once approved by medical professionals, users co-pay 15% of each CDMP bill and are allowed to use up to $400 per Medisave account per calendar year to pay for the rest of the bill. Up to 10 Medisave accounts of immediate family members can be used to pay for medical bills under this programme.

3.1.2.2 Ex-Post Funding Methods

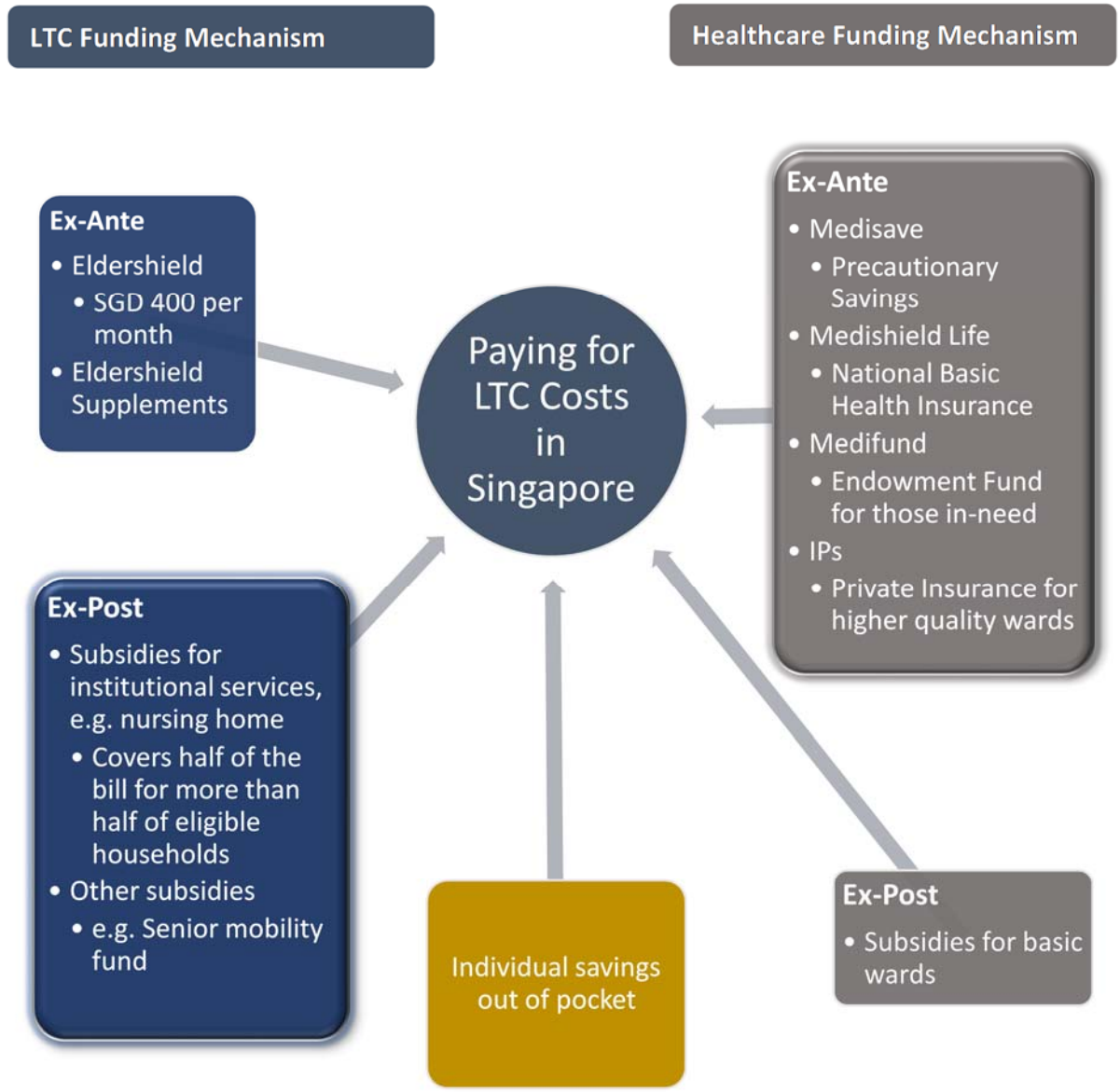
- Subsidies

Similar to subsidies for healthcare, an array of subsidies is available for Singaporeans using MOH-approved LTC service, such as nursing home, day care centres and rehabilitation service. The subsidies are administered on a means-tested basis. The subsidies framework will be examined in section 3.1.3.

3.1.3 The Unbalanced LTC Funding Mix

Currently, a significant proportion of LTC cost in Singapore is funded through inter-generational transfer, which would not be sustainable. In addition to the explicit LTC funding mechanisms, parts of LTC costs are also paid by the existing healthcare funding system. The diagram below colour codes the different mechanisms of LTC financing and highlights the relative proportion of ex-ante and ex-post funding in different mechanisms.

Figure 2 Visual representation: relative proportions of ex-ante and ex-post funding mechanisms in healthcare and LTC



The diagram highlights the unbalanced funding mix for LTC in Singapore. Ex-ante funding mainly comes from ElderShield, which gives relatively little pay-out. Ex-post funding from subsidies are much more substantial in covering severe disability costs. In contrast, the healthcare funding system places much more emphasis on ex-ante funding methods. The "3M" system forms a sustainable pre-funding system through compulsory pre-cautionary savings, basic mandatory public health insurance and interests from endowment fund to ensure intra-generational funding for basic healthcare.

Compared to the healthcare funding mechanism, the LTC funding mix relies much more on inter-generational transfer. Basic ElderShield gives a SGD 400 pay-out per month, which covers only 20% of the 2000 dollars [1] basic nursing care cost that we have estimated. In contrast to the relatively insufficient cash pay-out from basic ElderShield 400, direct transfer in the form of subsidies plays a larger role in funding LTC services for Singaporeans. Based on the means-testing framework and subsidies coverage rates that we obtained from the Singapore Department of Statistics (see Appendix 12), a subsidy framework is presented in the table below.

Table 1 Subsidy coverage of households with at least one elderly aged >65 (Combined using data from the Singapore Department of Statistics and (MOH 2015c)*)*

Household Per Capita Monthly Income	*Subsidy Rates for Singaporean Citizen*	*Percentage of households with at least one age 65+ receiving the subsidies rate*[2]	*Amount paid out of pocket for a 2000 dollars/month nursing home cost*
$700 and below	75%	36%	500
$701 to $1,100	60%	9%	800
$1,101 to $1,600	50%	12%	1000
$1,601 to $1,800	40%	4%	1200
$1,801 to $2,600	20%	13%	1600
$2,601 and above	0%	26%	2,000

[1] 2000 dollars per month is used as an estimation for monthly cost at nursing homes. Please refer to Appendix 8 for more details. This has not been adjusted for inflation.

[2] The percentage as shown in this column is tabulated based on data requested from the Singapore Department of Statistics.

As illustrated in the above table, 73% of Singaporean households with at least one older person are eligible for some subsidies if they are to use nursing home services. Given the estimated nursing home cost of 2000 dollars per month, more than 50% of the households are able to receive at least 1000 dollars of subsidies from the government. Subsidy is currently more substantial in LTC funding, compared to ElderShield 400.

We believe that the funding mix for LTC needs to be adjusted to focus more on pre-funding. As the Singaporean population ages rapidly, the old age support ratio is projected to decrease from 5.4 in 2016 to 1.7 in 2050. Elderly with severe disability is expected to triple by 2030 (MOH 2014b). This means that in the next few decades, the shrinking tax base will have to foot the costlier LTC bill for the growing size of the aged population. To reduce the huge pressure on government budget to fund LTC for the silver tsunami, LTC funding mechanism should centre on intra-generational and ex-ante transfer.

The government has recognized the enormous pressure on general budget created by the aging population. The 2018 budget has placed aging as one of the three major shifts faced by Singapore and have proposed measures such as increasing Goods and Services Tax and downward adjustment of budget growth in the next decade to ensure fiscal sustainability (Ministry of Finance 2018). Strengthening ex-ante funding mechanism will significantly alleviate the strain on taxation to fund for LTC.

Recent recommendations to strengthen ElderShield made by the ElderShield Review Committee formed in 2016 confirm our observations. The main recommendations are:

- Making ElderShield coverage compulsory for all Singaporeans;
- Changing the age to start paying premium from 40 to 30;

- Changing ElderShield from a private insurance to a public insurance administered by the government;
- Possible increase of premium for higher and longer coverage (Lai 2018)

These recommendations are supported by researchers from the Center of Research on the Economics of Aging in Singapore Management University (Ju & Sun 2018).

Increasing support to LTC funding through strengthening ElderShield is an ideal method for the following reasons. Firstly, the current subscription rate of basic ElderShield policy is above 90% (Lai 2018), it is administratively convenient to make ElderShield universal. Furthermore, the claiming criterion of being unable to perform minimally three out six ADLs for ElderShield is clearly defined and strict. This prevents the moral hazard of over-consuming insurance funding, because people are unlikely to game such criterion for excessive claims. Furthermore, similar to the premium subsidies to MediShield Life mentioned earlier, premium subsides for ElderShield can be given to ensure social equity.

3.2 Housing Equity Release

Singapore has a national policy of encouraging Singaporeans to own their own homes since the 1960s, culminating in the use of retirement savings to pay for housing. The Central Provident Fund (CPF) is a national compulsory retirement saving scheme. CPF can be used for housing, allowing over 90% of Singaporeans owning their own homes. As a result, Singaporeans have over consumed housing, at the expense of their retirement adequacy (Reisman 2007; Reisman 2009; Cardarelli, R. 2000).

The majority of home owners are HDB dwellers. The unique characteristics of the HDB scheme in Singapore limits the release of housing equity. Public housing cannot be assigned to financial institutions, which means they cannot be used as security for loans. HDB flats have

99 years leasehold and Singaporeans are subject to restrictions on the use of CPF for flats with less than 60 years lease left, which marks a big drop off in property value (CPF 2015). Restrictions on renting out HDB flats, even though age of flat is not a major factor in rental rates, also reduces property value. Any policy change in Singapore to help release housing equity would have to consider the active involvement of HDB policy.

Some policy attempts have been made to unlock housing assets such as reverse mortgages, lease buyback, Silver Housing Bonus and campaigns to encourage older people to downgrade their houses for smaller or shorter lease flats for cash.

Table 2 Summary of housing monetization schemes tried in Singapore (Combined from Housing Development Board)

	Explanation
Reverse Mortgage	Home owners can use their properties as collaterals to borrow money. The two institutions that offered reverse mortgage in Singapore discontinued their schemes in 2009 due to low demand.
Lease Buyback Scheme	Households whose owners all age above 65 and living in a 4-room or smaller flat can sell part of their lease back to HDB while continue leaving in the flat. HDB will in return top up the owners' CPF Retirement Account.
Silver Housing Bonus	Households with at least one Singaporean aged 55 above and month household income of < SGD12000 can buy a smaller HDB flat under the scheme to receive cash bonus up to SGD 20,000, if the owners use some of the net sale proceed tops up CPF retirement account and to join CPF LIFE.

Currently, these policy attempts have low take up rate (Chia & Tsui 2005). The national survey of senior citizens 2011(Kang et al. 2013) questioned citizens on their sources of funding should

they face a funding shortfall. About half said they would request money from their children, with "selling assets" or "subletting rooms" composing only 4.1% of responses. In addition, 16% of respondents said they "strongly agree" they should leave bequests to their children. Furthermore, ageing in place is a popular retirement choice (Addae-Dapaah & Wong 2001; Mehta 2002; Chan & Phillips 2002; Colombo et al. 2011; Costa-Font et al. 2009). This may have reduced willingness to release housing equity as well.

Based on data we obtained from the Department of Statistics of Singapore, downgrading is slowly gaining popularity in the past five years, but reluctance to do so persists. We observe the change in house size of households with all members aged above 65, including the owner, i.e. elderly households. From 2012 to 2017, number of elderly households in 1- and 2-room flats increased from 3.9k to 9.7k, yet number of elderly households in 4- and 5-room flats increased from 22.8k to 49.8k. The increase in number of elderly households dwelling in larger flats is probably the result of their children moving out. Owners of these houses chose to continue staying in the flat, instead of downgrading. Releasing housing equity is yet to be a popular choice to fund retirement.

Given the over-consumption of retirement saving for housing in Singapore, releasing housing equity will not only reduce the stress on funding LTC, but also allow individuals to achieve retirement adequacy. This policy direction will be explored in our primary research.

3.3 LTC Support for Dementia

As an age-related condition with increasing likelihood among a population that lives longer, dementia has become the fastest growing major cause of disability in the world (OECD 2015). In Europe, the prevalence of dementia has increased for 50% in the past two decades as the population ages, and it may continue to increase, given the strong correlation between age and the likelihood of having dementia (OECD 2015).

The same increasing trend of dementia is observed in Singapore. Alzheimer's and other types of dementia has been identified as the third largest burden of disease for Singaporean aged 65 and above, in the Singapore Burden of Disease Study conducted in 2010 (MOH 2014c). According to the Well-being of the Singaporean Elderly (WiSE) study published in 2015, the prevalence of dementia is found to be 10% among Singaporean population aging 60 years and above (Subramaniam et al. 2015). The number of persons with dementia in Singapore is projected to be 103,000 in 2030 (Alzheimer's Disease International & Alzheimer's Australia 2014).

Funding support for LTC of dementia is a matter of urgency because dementia not only has high prevalence, but also incur large monetary costs in the following ways:

- Research has identified the high level of care required for persons with dementia and the subsequent high cost of LTC for this group (Setia et al. 2011).
- Caregivers often drop out of work to take care of persons with dementia. In the United States, forgone wages by caregivers who left their jobs is found to take up 30% of the monetary cost of caring for persons with dementia (Hurd et al. 2013).
- The behavioural change in persons with dementia makes caregiving for dementia patients more challenging than for physical disability, which leads to higher caregiver

burden that is associated with negative mental and physical health outcomes on caregivers (Malhotra et al. 2012).

- Dementia often leads to physical disability eventually, which further adds up to a high total cost of caring for persons with dementia (WHO 2017).

Given the high cost of caring for persons with dementia and the rising prevalence, many countries are including dementia into their LTC insurance coverage. Korea and Japan, for example, include dementia in the claiming criterion for public LTC insurance. Dementia is listed as one of the geriatric diseases that qualify for the Long-Term Care Insurance for the Elderly (LTCIE) administered by the Korean government (Kwon et al. 2012). Similarly, dementia is factored into the assessment of the level of care needed in LTC insurance in Japan (Tamiya et al. 2011).

In Singapore, no public or LTC insurance provides coverage for dementia. Currently, dementia care is largely funded by inter-generational transfer through subsidies and individual savings. In-kind subsidies for persons with dementia are administered when they use dementia care centres and other related services approved by the ministry. Since 2011, Singaporeans can use up to 400 dollars from their Medisave accounts annually to pay for outpatient treatment of dementia; individuals can use up to 10 Medisave accounts from their immediate family members in one claim (MOH 2011).

Allowing more cash benefit from ex-ante LTC funding measure will provide essential support for the care of dementia patients. In-kind subsidies require applicants to apply and wait for the result of means-testing. Users need approval from doctors before they can use the CDMP to pay for some LTC services. Although Medisave withdrawal process has been made more convenient using the Medical Claims Authorization Form (MCAF) (Multiple), LTC facilities are not participating partners of MCAF(M) (MOH 2015a). Users need to submit multiple

MCAF (Single) by each account owner upon each payment, which places an administrative barrier to the usage of services. The administrative hassle of applying for in-kind subsidies and combining Medisave accounts may deter caregivers from making full use of them. In contrast, cash pay-out has the advantage of flexibility, compared to existing in-kind subsidies and transfer. Caregivers can use cash to make more flexible care arrangements (Colombo et al. 2011). This would help caregivers to achieve some balance between work and care-giving, and has proven to be a preferred option by caregivers in other countries (Fernandez & Nadash 2016).

We recognize that giving cash may lead to moral hazard as caregivers may claim cash without spending it on providing care for their family members with dementia. We argue that the cash is needed to compensate the caregivers. Caregivers can use the cash to pay for respite care. Besides providing flexibility for care arrangement, caregivers deserve some relief from the burdens they have suffered from providing care. The cash also compensates forgone wages of caregivers who left work or reduced work to provide care. A balanced funding mix with some in-kind subsidies and Medisave to cover for care costs, and a small amount of cash to increase flexibility and reduce burden will allow caregivers to have more leeway in making care arrangement and achieve work-care balance.

4 Primary Research

4.1 Overview: Rationale and Findings

When reviewing international practices, we observe that each country is using a unique policy mix to address funding issue in their LTC sector. In Singapore, subsidies and grant make up a significant part of LTC funding, an inter-generational transfer tool that may place significant strain on the current tax base. At the same time, a large part of Singaporean's retirement savings is locked up in housing, which leads to some Singaporeans being asset rich but cash poor. *Ex ante* funding through ElderShield provides for severe disability in old age, but the pay-out is widely recognized as being inadequate.

The evidence leads us to focus on strengthening ElderShield as a prefunding vehicle and releasing housing equity to achieve retirement adequacy. Increasing the proportion of these two policy tools in the LTC funding mix would relieve pressure on the current financing of LTC and healthcare which relies heavily on general tax revenues.

Our policy analysis targets at the current generation of pre-retirees. Current generation of older persons are covered by policy packages such as the Pioneer Generation Package. Findings from this research would not be in time to advise on policies for them. Furthermore, rapid changes in trends in education, income and social preferences also mean that LTC policies for pre-retirees are likely to need to differ from the current retiree population. We designed our research methods to gain knowledge on how to strengthen the two policy tools effectively for sustainable LTC funding for this population.

The table below summarizes our main findings from the two primary researches we did.

Table 3 Main Findings from Primary Research

Method	*Main Findings*
Structured Interview	1. Mental accounting plays a part in respondents' decision on purchasing ElderShield scheme
	2. Risk and debt aversion in releasing housing equity
	3. General absence of awareness and concern for LTC-related policies and planning
Expert Interview	1. The current level of support for people with dementia and their families is highly insufficient
	2. Early detection and intervention is crucial for dementia control

4.2 Structured Interview Design

We would like to examine the perceptions, opinions and preferences toward retirement, housing equity release and to ElderShield among the pre-retiree population, whom we define as those aged between 40 to 55 today. Research targets are limited to HDB dwellers, who form the bulk of the Singaporean population and whose housing equity is tied to HDB policies.

We chose structured interview method for the following reasons (Cohen & Crabtree 2006). Structured interview collects more in-depth information on opinions and perceptions compared to surveys; yet it allows better focus and is resource-efficient compared to a full-length interview. Within our limited manpower and time, structured interview is the optimal method to answer our research question.

Structured interview comprises of pre-set questions and a limited set of expected answers (codes). Given the limited scope of the research, we expect to reach saturation on the codified

answers with relatively few interviews. A study that interviewed 30 African women with 30 open ended questions on a similarly limited topic of sexual education found that 92% of all codes were developed within the first 12 interviews (Guest et al. 2006). This substantiates our estimation.

We conducted a purposive sampling based on the following characteristics. In terms of diversity, we covered all categories below with 12 interviewees except that we could not obtain a Malay representative.

Number of Children

Type of HDB flats (by number of rooms)

Ethnic Group (Chinese, Indian, Malay, Others)

Educational Backgrounds (Primary, Secondary, Tertiary)

Marital Status (Married, Single, Widowed)

During the interview process, we found that interviewees had strongly discounted the use of Medisave for paying for ElderShield. For example, we found out that a 40-year-old respondent purchased a supplement ElderShield after a private insurance agent recommended it to her over the phone. We thus identified an additional 3 interviewees aged in their early 40's, with fresh memories of the enrolment experience, to ask about their ElderShield enrolment experience.

Our structured interview contains three sections. The first section collects basic demographic information and socio-economic background of the respondent. In the second section, respondents are asked their plans and preferences, as well as their awareness of potential health and financial risks in retirement. This section also collects respondents' opinions on ElderShield. In the last section, respondents are asked about their awareness of existing policies for housing equity release and their own preference on the topic. We also present the micro-credit scheme in this section of the interview. The micro-credit scheme is similar to a reverse

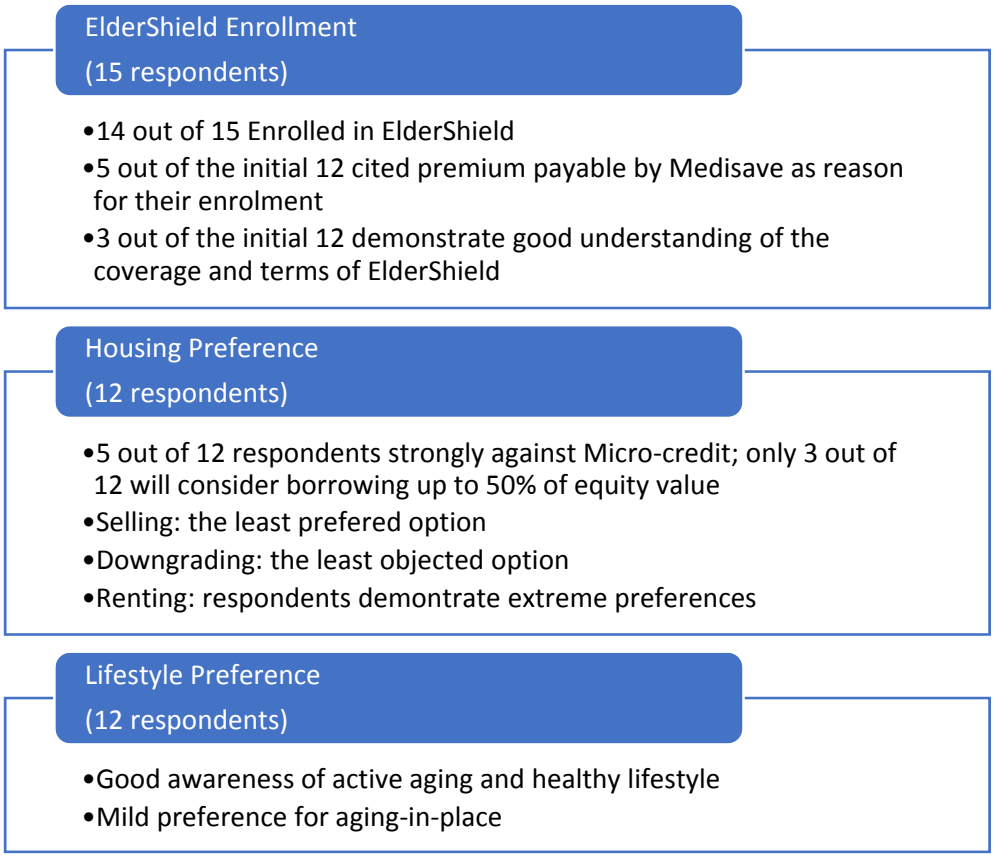
mortgage, except that users are restricted to use the released equity to pay for specific LTC services; the government would help the householder to manage their liabilities. The scheme also has specific features to address the risks that we mentioned earlier, such as the longevity risk (see Annex 11 for details of the scheme). After the presentation, respondents are to express level of interests in the micro-credit scheme, and their willingness to take up loans of up to 20%, 50% or 80% of their house value under the scheme, as well as their reasons. Even if rejected, we believe that discussions around these objections may shed light on how to promote housing monetization.

We recorded our interviewees' response in codes (see Appendix 10) and took down notes for additional insights.

4.3 Structured Interview Analysis

4.3.1 Basic Summary of Findings

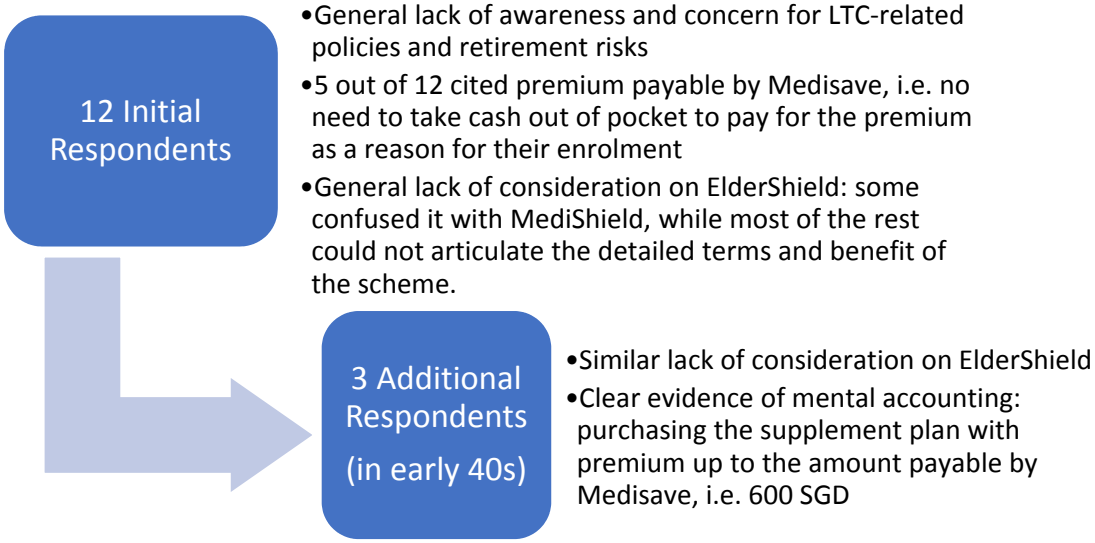
Figure 3 Summary: Structured Interview Findings



4.3.2 Findings

4.3.2.1 Mental Accounting when paying for ElderShield

Figure 4 Mental Accounting among respondents



Among our respondents, we found that many demonstrated mental accounting when making decisions about their ElderShield policies.

Mental accounting, a concept in behavioural economics, refers to the system we use to evaluate, regulate and process our financial activities. Instead of conducting cost-benefit analysis strictly at monetary value, people often resort to mental accounting to make financial decisions that are not fully rational due to our bounded rationality. For example, when we do budgeting, we may group our expenditure by the allocation of funding and source of income, which means that we do not treat money as homogenous units in this case.

During our interview, we observed this behavioural trait of mental accounting among many respondents. When asked why enrolled in ElderShield, five out of the twelve respondents mentioned that the premium for ElderShield is taken out of CPF, they don't have to pay cash out of pocket. This proves that the respondents value CPF money less than the same amount of cash out of pocket. The reason may be that money in Medisave is not withdrawable and can only be used to pay for public schemes and services. Due to mental accounting, the five respondents are explicitly more willing to take up ElderShield using their CPF.

To further test our findings from the initial 12 respondents, we identified three more respondents in their early 40s to ask about their decision-making process purchasing ElderShield, as the memory would still be fresh. This would also allow us to capture the relatively new marketing initiatives taken to encourage ElderShield enrolment.

Finding from the additional interviews reinforced our initial findings. All three respondents demonstrated little knowledge on the detailed terms and conditions of ElderShield, neither did they perform calculation on their retirement risks when deciding on which ElderShield plan to take.

Notably, one interviewee made her decision to purchase ElderShield supplement plan based on the maximum amount of premium payable by Medisave. This interviewee upgraded her

> *[What did you sign up for?]*
>
> *"I think I signed up for…whatever was the maximum of Medisave…"*
>
> *[What is your coverage?]*
>
> *"No, I can't remember."*
>
> *[You chose the supplement plan as long as premium is not paid from cash?]*
>
> *"Yes, yes. Medisave money cannot be used for other purposes anyways."*
>
> *---Respondent No.13*

ElderShield plan to the package that gives a monthly pay-out of $1000, recommended to her by an insurance agent over the phone. Some of her responds to our questions are quoted below.

The other two respondents expressed similar tendency to value CPF money less than cash. One of them recounted her decision on a supplement plan:

> *"I took the one that I can just full 100% paid by Medisave. Because the other one… if I take it up, I have to top up in cash, slightly top up, which I don't want to. I want to cover everything by Medisave."*
>
> *---Respondent No.14*

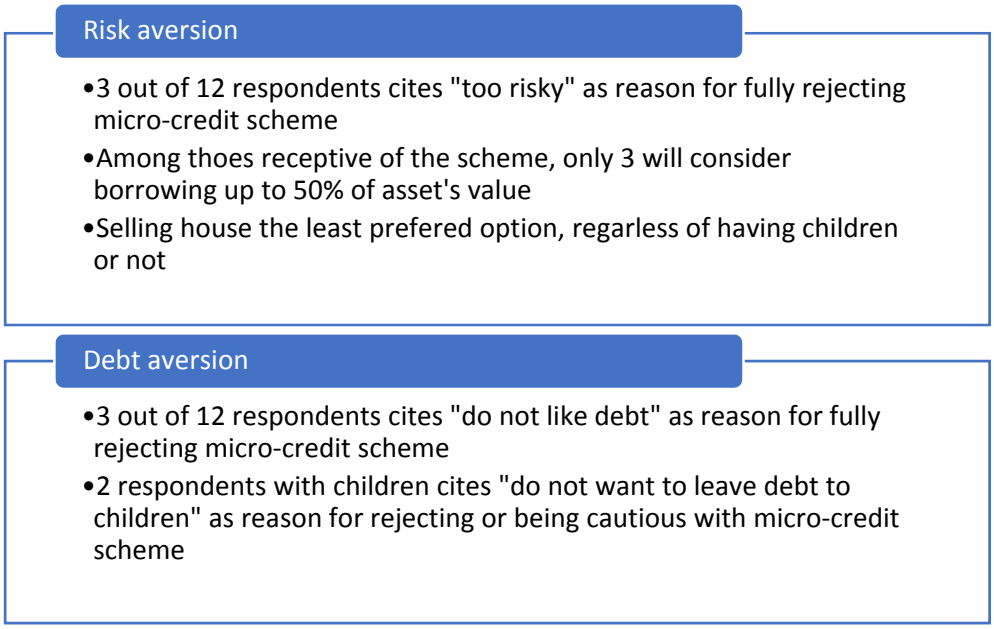
What further strengthens our findings in mental accounting is the marketing effort of the insurance agents. When recommending supplement plans to individuals, the insurance agents seem to acknowledge the effect of mental accounting by focusing solely on recommending

plans within Medisave cap. Instead of highlighting to the customers the amount needed to cover a disability, they tried to win over customers by addressing that the premium is payable through CPF.

Overall, our finding suggests that people are much less resistant to paying for premium if the premium is payable by CPF, not cash. This trait may also partly explain why people enrol in ElderShield despite knowing little about the plan. Based on this finding, we will illustrate how to utilize this behavioural trait for better and wider LTC coverage in the Recommendation section. We will also recommend measures to address the lack of awareness and concern on the financial risk in retirement.

4.3.2.2 Risk and Debt Aversion in releasing housing equity

Figure 5 Summary: Risk and Debt Aversion among respondents



Among our respondents, we identify strong aversion to financial risk and debt when considering options to finance their retirement and possible disability. The micro-credit scheme presented was overall unpopular as a result.

Risk aversion plays a strong role when respondents were considering housing equity release options during the interview. For the sake of fairness, we disclosed to the respondents that borrowing money using the micro-credit scheme entails different levels as property price changes. Many respondents voiced strong dislike of the uncertainty in property price. The potential fluctuation in housing price during the period between retirement to death significantly reduces the attractiveness of schemes. As a result, three respondents who out-right rejected the scheme cited "do not like risk" as a reason; among the seven respondents who are receptive of the scheme, only three were willing to consider borrowing up to 50% of their asset's value, and none wanted to risk up to 80%.

In addition to considering about taking up micro-credit scheme, risk from uncertainty also plays a role respondents' preference of existing housing equity release option. Selling house is the least preferred method to release housing equity among the respondents. We expected respondents without children to be more willing to liquidize their assets fully as they may be less prone to leaving a bequest; our finding, however, shows that selling house is equally disliked by respondents with or without children. One respondent mentioned that it would become more difficult to relocate as one grows old. The potential constraint brought by aging may have made fully liquidizing their property a highly risky option.

Debt aversion is another trait that affects respondents' preferences of the micro-credit scheme. Three respondents rejected the whole plan citing that they do not want any form of debts, despite that the debt can be paid off using their house after they pass away. Among those who are receptive of the scheme, none was keen in taking a loan of more than 50%, as the possibility of having debt becomes higher when the loan is larger. Those with children also stated that they do not want to leave debts to their children.

Table 4 Preference of Housing Equity Release Options Among Respondents [3]

	Selling	*Renting*	*Downgrading*
No. of respondents most prefer an option	1	5	4
No. of respondents most dislike an option	6	4	0

In contrast to the strong resistance to reverse mortgage and micro-credit that we proposed is the general acceptance of downgrading among the respondents. Downgrading and renting are popular preferred options, but downgrading is the least disliked option.

Risk and debt aversion lead to unwillingness among respondents to liquidize their housing asset for retirement adequacy using financial products that involve a level of financial risk. This finding highlights two policy options. Firstly, more effort can be devoted to promoting equity release options like downgrading, because it involves little risk and is thus likely to be more popular. Secondly, financial products that require highly predictable (if not fixed) input is likely to be better received, as people will have a sense of security in mind.

[3] The two rows do not add up to the total number of respondents as two respondents were unable to rank their preference.

4.3.2.3 General Absence of Awareness and Concern for LTC-related Policies and Planning

Table 5 Awareness of LTC-related policy and planning among respondents

	Good Understanding /Consideration	*Some Understanding /Consideration*	*Little Understanding /Consideration*
ElderShield[4]	3	5	7
Lease Buyback Scheme	1	4	7
Silver Housing Bonus	0	2	10
Reverse Mortgage	2	0	10
Possibility of Disability	3	3	6
Costs of Disability	3	1	8

Among our respondents, we saw a lack of awareness and consideration on existing LTC-related policies, as well as individual planning for LTC.

Although all have heard of ElderShield, respondents demonstrated mixed levels of understanding of what this LTC insurance scheme entails. When asked about the reasons of being enrolled in ElderShield, most claimed that they did not pay much attention to it and just "followed the government". Three respondents confused the scheme with the compulsory MediShield Life scheme. Among the 15 interviewees, only three were able to recall terms and conditions of ElderShield in detail.

[4] For ElderShield, all respondents have heard of the plan. We categorize those who knew the scheme no more than its name, e.g. confusing it as part of MediShield, thinking that it had been a compulsory scheme, or did not know that it covers severe disability, as having little understanding of the plan.

In addition, most interviewees have little understanding of policies that release housing equities. While majority has heard of Lease Buyback Scheme, only one could recount the gist of the policy while the rest know the policy only in name. Silver Housing Bonus is largely unheard of among respondents.

The lack of concern and knowledge for LTC-related policy corresponds with the lack of planning for LTC. While most interviewees have a vague perception of their retirement life and concerns over ailments and financial hardship due to chronic diseases, only two have concrete plans detailed to living arrangement, potential expenditure and the amount of money they need to save up for a reasonable level of retirement adequacy. One of them estimates the cost of severe disability at 4000 dollars per month, while the other set a goal of one million dollars saving in order to achieve his desired retirement life. Many have not considered the possibility or the cost of disability in retirement life and have not thought about how to finance and arrange disability care at all.

These observations suggest that there are needs to improve policy communications of existing policies and encourage pre-retirees to be more actively engaged in their own LTC planning. Creating early touch points to broadcast existing policies and increase awareness on financial planning would help individuals make better LTC plans. In addition, the general lack of planning also highlights the important role of strengthening ElderShield as a risk-pooling device. Improving ElderShield coverage through making it compulsory and adjusting premium and payout to reflect rising LTC costs and inflation, for example, will allow pay out from ElderShield to act as a minimal safety net in face of severe disability

4.3.2.4 Other Findings: Lifestyle and Aging-in-Place

On top of the questions on housing and ElderShield, we also asked questions on general preferences for retirement. Active aging and aging in place are considered important pillars of

successful aging by researchers and our client. Most respondents are willing to remain active in retirement. Aging in place is generally preferred, but few strongly insisted on it as well.

Regarding active aging, all interviewees indicate that they would like to stay active after reaching retirement age, through working part-time, volunteer work or recreational activities. Most interviewees want to work part-time. In addition, all interviewees agree with the need to adopt healthy lifestyle now to lower disability risks in the future, with some engaging in recreational sports to maintain active lifestyle.

In terms of aging in place, eight interviewees prefer to stay in the same neighbourhood they currently live in. Among the eight, three strongly prefer to stay. They cited convenience, closeness of family and friends and familiarity as key reasons for staying. The rest are either neutral about the issue or want to upgrade their living environment through moving to better locations.

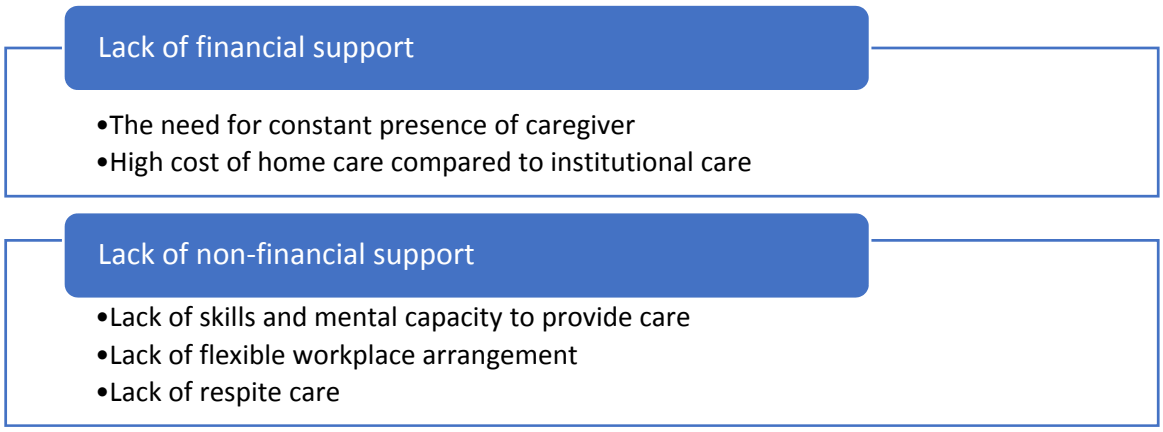
The good awareness on healthy lifestyle and active aging shows that existing campaigns in promoting active lifestyle have positive outcomes. We can learn from successful campaigns such as the National Steps Challenge to improve awareness on Dementia and on LTC-related policies.

4.4 Dementia Expert Interview Analysis

We interviewed a senior staff from a VWO that provides dementia day care services, to better understand the need for and the challenge in formally addressing cognitive disabilities on 20 December 2017.

4.4.1 Insufficient Support for Persons with Dementia and their Family Members

Figure 6 Summary: the lack of support for people with dementia and their caregivers



Our interviewee voices concern over the lack of support for people with dementia and their families. Caring for PWD can be costly and demanding for caregivers; yet support for older persons with dementia is weak. The basic LTC insurance plan ElderShield does not cover dementia.

More financial support is required because taking care of people with dementia can be very expensive, especially for home care. Due to their cognitive conditions, people with dementia require constant presence of caregivers to guard them from danger and injury. Hiring a domestic worker becomes necessary if the family members are all working. Given this need for constant care, institutional care is more affordable compared to home care (and community care). Interviewee uses the following case to illustrate her point: Suppose that a family with a single bread winner taking care of one person with dementia is qualified for the highest level of subsidies (80%) for both community care and nursing care, the costs for the minimal level of care are listed below:

Table 6 Comparison of Monthly Care Costs for a Family qualified for Highest Level of Subsidies

	Items (Price after subsidies)	*Total Cost Per Month*
Home Care	1. Hiring domestic worker: $480 2. Medical Expenses: $100 3. Daily expenses: $400	$960 (Higher than per capita income)
Institutional Care at a Nursing Home *($2000/month)*	1. Nursing Home Cost: $400 2. Medical Expenses: $100	$500 (lower than per capita income)

Even though both are subsidised, home care cost could easily be twice of nursing home cost. If aging-in-place and community care is preferred both by the government and the society, more financial support is essential to help families bear the cost.

The interviewee also raises a concern on the lack of non-financial support for families with older persons to achieve aging in place. Firstly, caring for people with dementia is not only time-consuming, but emotionally demanding and draining. Many caregivers lack skills to handle the change of temperament and behaviour of their loved ones, which leave them in distress. Furthermore, working caregivers have difficulties balancing work and care-giving. The condition of dementia patients can be sporadic, which requires frequent and unpredictable hospital visits. The lack of workplace flexibility for people to arrange eldercare leave also contributes to caregivers' difficulty, and some eventually dropped out of workforce. The lack of holistic and flexible respite care also increases the difficulty of caring for people with dementia at home. There are currently "bits and pieces" of services with short respite period in different locations providing limited service items yet charges relatively high prices.

Recognizing the high cost of caring for older persons with dementia, our interviewee agreed with the importance of providing better financial support for this group. She highlights that

there is a need for establishing different assessment tool and qualifying criteria. Cognitive disability is different from physical disability, although the two may converge towards the inability to perform ADLs. Assessment tools such as the Montreal Cognitive Assessment can be used to identify cognitive disability; family history and change in walking pattern are also factors that may predict cognitive problems. The policy direction is to include dementia as a condition to be covered by ElderShield.

4.4.2 The Importance of Early Detection and Intervention for Dementia Control

Our interviewee also emphasizes on the importance of early detection and systematic monitoring of cognitive diseases among older persons. Many early symptoms can be misinterpreted and dismissed as normal aging by family members. Early detection and consistent monitoring of progression would allow targeted intervention to greatly slow down the deterioration of cognitive capacity. Effective measures to address cognitive disability thus requires touch points to capture early signs and to follow up with the progress of treatment.

This insight from the interviewee's expertise highlights the importance of having early and extensive touchpoints among older persons and their families. Such touch points would increase awareness of dementia and capture older persons with high risk for follow-up if necessary.

5 Recommendations

The main recommendation follows the strategy laid out earlier in the introduction. We want to significantly increase savings in ElderShield through both individuals and the government expenditure. For the government, it is a case of shifting some future expenditure on subsidies to spending on premium subsidies in ElderShield. The government can then adjust its future subsidies so to rebalance the funding mix, very likely by taking into account its premium subsidy for each individual.

5.1 Findings to apply

From primary research

Our interviews with our subjects, based on described actual behaviour, confirm that the mental accounting bias for Medisave is strong. This essentially means that they do not accord their Medisave savings the same importance they do their cash savings. $100 in a Medisave account is not nearly even the same as $100 cash in the pocket. We can take advantage of this to nudge people behaviourally into increasing their premium subscription for supplemental ElderShield.

Our interviews also indicate that our subjects have very little specific knowledge about ElderShield, as well as various government schemes to monetize their houses, such as the Lease Buy Back scheme or the Silver Housing Bonus.

We interviewed an expert in dementia care. While a patient may be able to perform physical ADLs, he or she may still need the constant presence of a caregiver. Early and targeted interventions in the early stages would help a lot in slowing down deterioration of mental capacity. Due to the highly idiosyncratic nature of the problems faced by each individual and family, it would be more efficient to give cash instead of in-kind support to allow for flexible use. There is no support of this condition from ElderShield at present.

Our dementia expert also told us that an incentive exists for families to place their loved ones with nursing homes (with high subsidies up to 80%) instead of caring for them at home. Although families enjoy lower costs using nursing home services, the overall cost of nursing home is higher than home care if the heavy government subsidies are included. A cash pay out on diagnosis of dementia may help to adjust this imbalance and is consistent with an objective of aging in place where possible.

Literature Review and other secondary sources

We have shown that the current subsidy system may be applicable to as much as 73% of the current households with at least one member aged 65+. With projected demographic trends, this will put enormous pressure on the subsidies.

The ElderShield Review Committee has made some interim findings that coverage is currently good at more than 90%, but that it should be made mandatory to make it universal.

MediShield Life, a universal healthcare insurance, was launched in 2015 with both transitional subsidies for the first 4 years, and premium subsidies for the lower income group up to a household per capita income of $2600 (MOH 2015d).

A study conducted in Singapore has found that as many as 1 in 10 persons over the age of 60 will develop dementia. This is on par with the incidence of diabetes, a disease with significant policy attention in Singapore (National Registry of Diseases Office n.d.). Cognitive disabilities such as dementia are covered in many other country's LTC policies. In Singapore, insurers routinely include disability in their critical illness policies (AIA n.d.; AVIVA n.d.). Yet, ElderShield does not cover this condition.

There is evidence from other countries that healthcare and long-term care costs tend to increase quite significantly over time. For sustainability, cost inflation needs to be accounted for.

Client Requirements

Our clients have indicated that dementia support is an important issue to them in discussion. As corroboration, one of us has written a commentary for Channel News Asia on ElderShield (Tan 2018). Our clients then reproduced it in their internal newsletter, highlighting the topic of dementia coverage in bold, big font, emphasizing this.

5.2 Design considerations and main assumptions

All the calculations, in the sections that follow, are necessarily approximate and will rely on various assumptions, which will be stated. The idea is to use these numbers as a framework for the specific recommendations to make them more concrete, and to show reasonableness. The underlying objective of the calculation should be kept in mind as the primary argument. Where necessary, there is discussion about some variations on the recommendation. The detailed calculations will be in the appendix.

We will assume that we want to target a basic disability care costing $1200 a month for lower income persons and have an aspirational target of $3000 a month for the better off (all in today's dollars). [5] For the basic target, we assume that 50% will be covered by ElderShield, and for the aspirational target, 30% will be covered by ElderShield. The rest of the funding will have to be covered by government programmes or from out of pocket outlays from individuals.

We need to add cost inflation. The CPF Life escalating plan annuity uses 2% as a baseline for long term inflation adjustment (CPF Advisory Panel 2015). We will do the same. For inflation adjustment purposes, we assume that a disability claim is made 30 years later at age 70. Hence, we will assume that any costs today, inflate at 2% for 30 years.

At age 40, when you start paying premiums, the definition of "less well off" will have to rely

[5] See Appendix 8 for rationale.

on individual earned income. We realize that this is inconsistent with MediShield Life premium subsidies, this is discussed in the relevant recommendation pathway.

According to our latest population pyramid (Department of Statistics Singapore 2017), the number of people aged 40-44 is 311k now. If you divide this by 5, you arrive at an average of 62 thousand people per cohort aged 40. We are currently at the fattest part of this pyramid, so this will be a worse case cohort number.

Without performing actuarial calculations, we can use existing quotes for basic ElderShield, and private insurance, to extrapolate the additional premiums for physical disabilities needed in a proportional way. Premiums for males and females need to differ in practice, but for the purposes of conciseness, unless otherwise stated, we will assume an average of $200 a year premium, paid from age 40 to 65, will result in a pay-out of $400 a month for a maximum of 6 years for the basic premiums.

5.3 Recommendation 1 – increasing ElderShield coverage

5.3.1 Summary

We detail 4 specific pathways to increasing ElderShield coverage. They can be summarised in the table below and explained in detail in the subsequent subjections.

Table 7 Summary of pathways to increasing ElderShield Coverage

Pathway	**Objective**
Keep basic premiums and Medisave Withdrawal Caps for ElderShield indexed to inflation.	Cost inflation of long term care.
Make ElderShield Mandatory. Increase Basic Premiums slightly. Have government match premiums for the lower 50% of each cohort (by income).	• Universal coverage. • Shift government subsidies from future to present with subsidies for the lower income. • Higher basic coverage for individuals.
Cover dementia as a necessary disability condition with an insurance rider or separate insurance.	• Services an important gap in ex-ante disability coverage. • Supplement home care to reduce incentives to take up highly subsidized nursing that cost more overall. • Help caregivers and dementia sufferers as a unit.
Increase annual Medisave Withdrawal Cap immediately to $1000 from $600.	Increased coverage for those who can afford it.

5.3.2 Pathway 1. Build in cost inflation into premiums and withdrawal caps

This will apply to the basic ElderShield premiums, as well as the Medisave Withdrawal cap.

We maintain the flat rate of premiums paid from age 40 to 65. However, for each subsequent birth cohort, we recommend an annual increase in this flat rate set by the previous year's inflation rate (the pay-outs will also increase). We similarly recommend increasing the Medisave Withdrawal Cap by the previous year's inflation rate.

5.3.3 Pathway 2. Increase basic premiums in ElderShield

In line with the ElderShield Review Committee recommendations, we agree that a minimum, basic contribution should be mandatory. Universal coverage will avoid issues of having to support a person who did not enrol, and issues of adverse selection.

We recommend that basic premiums are set at $270 a year (up from the average $200 currently) from age 40 to 65. The government should match this payment equally for persons below the median income (at age 40) level for a total of $540 in annual premiums. The government should also cover the basic premium for those who are neediest and cannot pay the basic premium. For the matching premium subsidies, the government will probably not spend more than a maximum of $8.4 million a year per birth cohort, or $218 million a year for a maximum 26 overlapping cohorts.

Table 8 Summary of basic premiums recommended (no taper of government premium matching)

Who	Individuals Pay	Government Pays	Total Premiums
Needy Individuals	$0	$540	$540
Below Median Income line	$270	$270	$540
Above Median Income Line	$270	$0	$270

If the drop off in matching premium is too sudden for individuals on upper side of the median income line, the government can consider tapering off matching contributions. However, we continue to recommend that the matching contribution at the median income line be 100%, which means that the taper starts at the median income level and upward. Given that current nursing care subsidies cover as much as 73% of households with at least one elderly, this will not be inconsistent. The table below has an alternative illustration.

Table 9 Example of recommendations of premiums and subsidies with taper

Who	**Individuals Pay**	**Government Pays**	**Total Premiums**
Needy Individuals	$0	$540	$540
Below Median Income line	$270	$270	$540
50th-60th percentile	$270	$135	$405
60th-70th percentile	$270	$60	$330
70th percentile and above	$270	$0	$270

We note that MediShield Life was introduced in 2015, and it came with transitional subsidies and premium subsidies for the lower to middle income (MOH 2015d). A similar strategy could be used for ElderShield. The MediShield Life premium subsidies are a permanent subsidy applying to households with up to $2600 in household per capita income.

It is possible that the means testing for ElderShield premium matching follow the structure of MediShield Life. However, we think there are advantages to using an individual median income level. The argument in favour of using household per capita income is that it matches the existing subsidy structures for MediShield Life and healthcare. The arguments in favour of using median income includes

- A clear communication to the public that a certain percent of the population is covered.
- A threshold that will move automatically with incomes.
- A direct targeting of individuals, and their ability to pay premiums.
- Inaccuracy of using household per capita income when working individuals in the household may have young children and elderly dependents in the household and is likely to be in the prime of their earning power at age 40, and whose household structure is likely to be different when they retire.

5.3.4 Pathway 3. Cover the dementia gap

As noted, dementia is not covered under disability insurance from ElderShield. We think it should be covered. A cash pay-out would be consistent with the current ElderShield. In the case of dementia, the cash pay-out is as much a pay-out for the dementia patient as it is for the caregiver. It also mitigates some of the incentive for families to turn to nursing homes with their subsidies instead of caring for them at home. The cash can be used for respite care, or even to allow the caregiver to forgo work for caring purpose.

For this recommendation, we assume that the pay-out would account for 10 hours of respite care a month. The pay-out would be $500 a month for a maximum of 6 years. $500 being the estimated cost of 10 hours of respite care in 30 years.

We would like to make an estimate of the premium required to determine its reasonableness in adding to ElderShield coverage. Following the assumptions detailed in the appendix, we estimate a worst case additional premium of $76 per individual per year from age 40 to 65.

Table 10 Recommendation for dementia coverage premiums (no tapering)

Who	Individuals Pay	Government Pays	Total Premiums
Needy Individuals	$0	$76	$76
Below Median Income Line	$38	$38	$76
Above Median Income Line	$38	$0	$38

Similar to the basic premium case, we recommend that the government subsidize the premiums on a matching basis for the lower income half of the population. In such a case, the outlay from the government for the matching premiums is estimated to be $1.2 million per cohort per year, or a maximum of $30.6 million a year for 26 overlapping cohorts.

The 10% claim rate used for the calculation assumes that (A) it is agreed that the same diagnostic criterion be used for payment disbursement, and (B) that actual reporting will match this 10% rate. There is some suggestion (Subramaniam et al. 2015) that cultural factors may be at play when reporting dementia. In other words, the diagnosis rate (and the claim rate) may not be the same as the actual prevalence rate, as dementia diagnosis requires a potentially sensitive decision for a family member or the patient to recognize he or she must come in for a diagnosis. The question of detection will need to be separately addressed.

Another factor that will pull in the opposite direction is that it is possible that the presence of dementia cover itself will improve claim rates by encouraging caregivers to try to move to diagnose and claim.

The use of a 10% claim rate in the calculation is then a relevant conservative rate to use.

We suggest that the premium be kept at this level. Any reduction in actual claims experience can be used to fund increased coverage to the risk pool instead of a premium rebate as is currently the case with the existing ElderShield. This increased coverage can be in the form of increasing the monthly pay outs or increasing the maximum claim period. This should be advertised as a feature of the scheme.

As dementia involves a loss of judgement, the process should include contacting enrolees to make a Lasting Power of Attorney (LPA). We recommend that this be done at age 55.

5.3.5 Pathway 4. Raise the Medisave Withdrawal Cap for ElderShield

We have evidence that individuals consider Medisave money to be not as valuable as cash (called "mental accounting" in behavioural science). Specifically, that individuals contacted for enrolment in supplemental policies by private insurers, were less concerned by degree of coverage, than if the coverage needed them to use cash for premiums. Therefore, raising the Medisave Withdrawal Cap will have an effect on nudging individuals, via the mental accounting effect, to increase their disability coverage with private insurers.

We recommend that the Medisave Withdrawal Cap for ElderShield be raised from its current $600 a year to $1000 a year. This will nudge individuals to assume a total coverage of (for a female) about $1600 a month, without requiring a cash outlay.

The Medisave account balance is refillable as transfers from the CPF Ordinary Account. Raising the Medisave withdrawal cap may not crowd out other uses of Medisave, especially for the higher income individuals. Instead, it represents a partial sequestration of retirement funds into saving for one's disability care.

The prospect of increase of business for private insurers should serve as an additional spur for these insurers to redouble their marketing efforts to get people to sign up.

5.4 Recommendation 2. Raise awareness of options at age 55

The basis of this recommendation is our finding that individuals do not appear to know ElderShield, and various housing monetization options well. At the same time, we need to require individuals to complete their Lasting Power of Attorney (LPA) nomination in case of mental incapacity.

Singaporeans have a well-known retirement life cycle event at age 55, when they can withdraw their CPF savings and start their retirement account.

We take advantage of this life cycle event to reframe the individual's retirement and old age options in a single stroke, at a point of life where he or she might be most expected to be receptive to such information. The exact details will need to be designed by experts in behavioural science and marketing professionals, but in essence, a package will be sent to the individual and will

- Provide a hotline or physical location for the individual to go for consultation.
- Advise the individual to make a LPA, and how to do so.
- Provide information on the government schemes of the day, including housing monetization, health care, community resources, and various government schemes.
- Provide information on old age and retirement issues, including disability, health, and mental capacity.

Last, we suggest that we can gamify the experience to ensure that the individual has read and understood the information. The high penetration of smartphones, and the high proportion of those with post-secondary education (Department of Statistics Singapore 2011) with today's pre-retirees indicate a likely high rate of ability to comply. A URL link will be provided in the package, with a promise of a prize to those who successfully complete a quiz based on the

information in the package. The use of gamification in eliciting behaviour change is well known in the literature (Johnson et al. 2016). A local example would be the "National Steps Challenge" promoted by the Ministry of Health (Health Promotion Board n.d.).

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7 Appendix - Suggestions for further research

We have made a few findings in our research that we did not turn into recommendations. However, we think they are promising areas for further research. Therefore, we document these areas in this section.

The basis of our suggestions arises from 2 areas:

- Our primary research indicates that downgrading is the most acceptable means of housing monetization. We also find that individuals are averse to risks and uncertainties when considering housing monetization options.
- During a meeting with our clients, we discussed a side topic on how to best control labour supply costs for LTC. One suggestion made was to make full use of our Foreign Domestic Worker population in Singapore by providing nursing internships. As our clients were excited by this idea, we document it here.

7.1 Making downgrading more attractive

Our primary research indicates that of all the options for monetizing housing, downgrading is the preferred choice. Downgrading is simpler and does not have any long-lived risk that can affect the individual.

Private schemes such as reverse mortgages are moribund with the last private provider exiting in 2009 (Singapore Parliament Proceedings 2017). Current government schemes to help householders monetize their housing do not have a high take up rate.

For example, the Lease Buyback Scheme (LBS) (HDB 2017), launched in 2009, allowed HDB home owners to sell the tail end of their lease back to the HDB and use the proceeds to buy an

annuity. There were no guarantees about what would happen if the individual outlived his remaining lease. From 2009 to 2016, only 1917 households took this up.

While downgrading seems simple and obvious, we think that individuals and families may need a push to go down this path. This can involve different types of housing downgrade options, incentives, or design of housing mixes, or perhaps informational campaigns or counselling.

7.2 Innovative products in housing monetization

Our primary research indicates individuals are very risk averse. For a housing monetization policy to be successful, it should take care of minimizing risk in one or more dimensions – property prices, interest rates, and longevity risk.

The government has an incentive to help the public release their housing equity given it was the government housing policy that caused a high consumption of housing at the expense of retirement adequacy, and that this issue can come back and bite them politically in years to come when large numbers of retirees come onboard.

One example of an innovative product might be the annuity mortgage (Huan & Mahoney 2002) implemented in a Singapore context. An annuity mortgage is particularly attractive if annuity rates are high and interest rates are low. In the Singapore context, we have a chance to make it attractive.

An annuity mortgage works by the homeowner borrowing a fixed sum of money. This fixed sum is then immediately invested in an annuity. Part of the annuity income is used to pay the interest on the loan. The remainder is income for the homeowner. The only outstanding liability is the original loan amount. When the homeowner moves, or dies, the house is sold, and the original loan amount is repaid.

The Singapore twist is as follows:

- Restrict the loan to at most 30% of the house value or the top up limit of CPF Life (see next point), whichever is lower. Since interest is paid, the capital on loan is fixed. The likelihood of negative equity is very small, assuming the flat is not too near its 99-year lease date. [6]
- Use the loan proceeds to top up the CPF retirement account up to the enhanced retirement sum (ERS), currently at $256,500.
- The government guarantees the loan capital. That is, it will top up the difference if the house is sold under the loan value. This guarantee uses the government's AAA credit rating to secure a low, riskless, interest rate on the loan. The government is unlikely to have to cough up actual cash for this guarantee. This essentially monetizes the governments credit rating.
- The government mandates a fixed rate of interest on the loan. It can do that in a commercially friendly way by being a counterparty for fixed-float interest rate swaps for banks to swap their floating rate exposure. As the government is a price maker for interest rates (both on the CPF side and on the market side), it is well able to manage this.

Assuming a $100,000 loan at 2.5% interest and the proceeds put into CPF Life, the annuity mortgage could return $620 a month in income. [7]

- Interest rate risk does not exist for the individual. It is assumed by the government.
- Longevity risk has been hedged by the annuity.
- There is almost no risk of negative equity [8].

[6] This condition can be relaxed if the HDB flat has good value even with only a short lease left. See next suggestion.
[7] Using the CPF Life calculator on the CPF website, and a simple interest rate calculation on the loan.
[8] Negative equity is when the amount owed is larger than the value of the property.

- The risk of dying too early is taken care of by the CPF LIFE bequest feature, which leaves some money to a person's heirs if that person dies too early.
- Income is substantial due to the high annuity rate from CPF Life, and the relatively low interest rate on the loan.

7.3 Relaxing HDB regulations for older flats

Housing monetization is difficult when you live in a HDB flat with a value declining toward a 99-year lease horizon and the HDB restricts your ability to do what you want with your flat. Public housing cannot be assigned to financial institutions as collateral. Singaporeans are restricted from using CPF for flats with less than 60 years lease left. Renting is also subject to restrictions. Richer Singaporeans or foreigners cannot buy more than one HDB flat for investment.

On the other hand, even a 50-year-old flat has considerable economic value if rented out. $1500 a month for a 3 room flat in a mature estate for 49 years is almost $900k of cashflow. The lease buyback scheme, for example, does not recognize this potentiality by pricing leases it buys back at "market prices", which are in turn depressed because of these restrictions.

By relaxing the HDB rules, ideally by privatizing the HDB market for older flats greater than 50 years of age, this opens the door to monetization, through downgrading, correctly priced government schemes, and private sector innovation in financial products. There is precedent for this with HUDC privatization [9], started in 1995, likely once it became clear that HDB would be the sole "winner" of housing of the middle-income class. The trade-offs would be that privatized HDB flat owners would now be responsible for their own common property, were

[9] HUDC was a programme started in the 1970s aimed at "sandwiched" middle income groups not eligible for low cost housing (Heng 2014) (Latif 2009) (Eng & Kong 1997). As HDB flats became more universal, and good quality private housing became available, HUDC flats became less relevant. The last HUDC estate, Braddell View, was privatized in 2017.

not eligible for HDB upgrading programmes and so on. Similar to the HUDC privatization process, this could be managed on an incremental basis as HDB blocks or precincts voted to privatize.

There is a positive side effect of any successful policy innovation here. Given an increasingly older stock of flats, the 99-year lease has been a hot topic of recent discussion (J. Ng 2017) (K. Ng 2017) and potentially a political hot potato in the next several decades. Privatizing older HDB flats combined with a gradual adjustment of supply of new flats may help to mitigate this future political and social issue.

HDB policy is, however, a fundamental tenet of our social policy. So, this should be studied carefully.

7.4 Nursing Internships

In richer Asian countries such as Singapore and Hong Kong, a significant part of LTC is undertaken informally by Foreign Domestic Workers (FDW) who form a significant workforce (Yeoh & Huang 2010) (Chan & Phillips 2002). The Singapore government recognizes this by providing subsidies for FDW and limited training programmes (AIC n.d.).

Labour is highly significant to LTC costs. For non-residential services, the main cost is staffing cost (Wittenberg 2016). In Singapore, just nursing cost itself can be a third of the cost of residential care (Wyman 2016). In our recommendations, we assumed a 2% cost inflation for LTC. The OECD experienced 4.6% annual increases in real costs for LTC from 2005 to 2015 (OCED 2017). Our working age population will also shrink in the next few decades, likely providing more pressure on nursing labour availability and cost.

Clearly, our 2% cost inflation assumption used in the recommendations has the potential to be an under estimate. The supply of trained manpower will impact wage costs in this sector. We

can improve the supply of labour and at the same time, provide good quality in-home care for some seniors.

In Singapore, the government recognizes the role of FDW in informal long-term care by providing some subsidies for salaries and levies. There are also subsidized courses that the FDW can attend, up to several hours duration. However, these are meant primarily to help the FDW be a better informal carer, not a professional nurse. We think it can go further.

The idea is to:

- Via a job interview, identify suitably qualified FDW for internships to turn them into fully qualified nurses.
- The internship will be on the job with a disabled senior in a household.
- The government will co-pay the FDW wages while on internship on top of existing FDW subsidies.
- The intern is supervised properly with respect to training, on the job work, and their personal welfare. Their primary duty is care for the disabled senior.
- The household has to release the intern for some hours of offsite training per week.
- At the end of the internship, the intern is helped to find a job in LTC services.

In summary, we can take the opportunity to serve the disabled elderly better, and at the same time, train suitable FDW to become professional nurses through an on the job internship programme, making them suitable for deployment in the local context. This permanent up skilling benefits not only the host country, but also their home countries, when they eventually return.

8 Appendix – Detailed Calculations for Recommendations

8.1 Justification for disability costs used as targets

Nursing care costs can vary widely depending on a menu of choices – many of which are technically discretionary, though still important to the welfare of the caregiver or the recipient. An individual can choose home-based care or residential care (shared or private). There is also the cost of incidentals and recurring expenses such as adult diapers, consultation fees, counselling, transport, medicines. We have no availability of data on the average consumption of nursing care in Singapore and even if we did, there is the issue that demand factors can easily be influenced by availability of financing options, so that the current average consumption, even if available, cannot be easily used.

We still need to make a best guess, using a triangulation of sources.

Kwong Wai Shiu hospital (Kwong Wai Shiu 2018) offers a range of ward charges from $990 a month to $2,568 a month before subsidy. The AIC affiliated programmes SPICE and IHDC (home based care) estimate a cost of $1600 to $2200 in professional charges (AIC n.d.). The chief of clinical affairs at the Tsao Foundation, in a presentation to IBF Connect [10] on Financial Planning issues (W. C. Ng 2017) provided estimates such as $80-100 a day in a senior care centre, $2000-3000 per month in a nursing home, not including consumables, and $3500 a month for an assisted living facility.

Based on the above, we think a good cost target, for basic care, to aim for is $1200. For the upper range, an aspirational target, we set the amount at $3000 a month.

[10] Institute of Banking and Finance (IBF). An association of finance professionals. www.ibf.org.sg

8.2 Calculations for pathway 2 - Increase basic premiums in ElderShield

For the minimum coverage calculation, we use the target threshold of $1200 a month. At a 2% cost inflation in LTC services, this will grow to $2173 in 30 years. We could like to cover 50% of this via ElderShield. This means $1086 in ElderShield pay outs, with the equivalent premium being $543, which we will round to $540.

The recommendation is that 50% of individuals (classed by median income at age 40) are supported by matching premiums from the government, not counting needy cases. Assuming 31,000 people per cohort falling below the median income, this means that the co-payment by the government is about $8.4 million dollars per cohort per year. A maximum of $218 million per year assuming 26 overlapping cohorts.

8.3 Calculations for pathway 3 – dementia coverage

We make the following assumptions to derive a magnitude of order estimate on the premiums needed. The purpose of this calculation is to check the reasonableness of a dementia cover.

Assumptions are:

- Any premium paid will result in benefits independent of physical disability cover. That is, a person can get dementia and a pay out, but if he develops a 3 ADL qualifying condition later, he or she can claim for that too. This means that our calculation will be a worst case one. If the government decides to incorporate this into the main pay out, the joint condition will likely mean the premium increase is less than calculated here.
- The pay-out is assumed at $500 a month. This will defray the cost of live in help or respite care. Assuming a 2% inflation rate, and an average claim time of 30 years, this is the equivalent of $276 in today's dollars. Assuming temporary help at $25 an hour (Homage n.d.), this will pay for 10 hours a month of respite care.

- The claim rate adopted by this calculation is the 10% incidence rate of adults over age of 60 found by this Singapore study (Subramaniam et al. 2015) using the 10/66 protocol, a protocol that agreed better with clinical assessments. The alternative protocol, DSM-IV, found a 4.6% incidence rate. For the purpose of this calculation, we will use the 10% incidence rate as a conservative number.
- We use the Life Tables (Department of Statistics Singapore 2016), primarily to project individuals alive at age 60, and to project total premiums paid.
- The average age of onset is set at 80 based roughly on incidence rates by age groups found in (Subramaniam et al. 2016) (OECD 2015). A term structure of disability onset is not used. That is, for simplicity of calculation, we assume every single person in the pool gets dementia at age 80.
- The investment return of the premiums invested is 2% per annum.
- The life expectancy given onset is 6 years. There appears to be no firm consensus as to life expectancy given onset, it may in any case vary with context (Lee & Chodosh 2009). One UK based study (Rait et al. 2010) based on reported dementia patients does conclude that life expectancy of dementia sufferers is between 6.7 years for those in their 60s to 1.9 years amongst those in their 90s.

Under these assumptions, we estimate an annual premium of $75.3 a year (round to 76). Our calculations show the greatest impact on premiums would be in the life expectancy given onset. Therefore, similar to ElderShield400, we would limit the coverage to a maximum term of 6 years so as to prevent unsustainable pay-outs. This will also likely lower the actual premium needed to be paid further since pay-outs are limited. However, if the criteria used for the disability pay-out can be lowered from the one used in the 10/66 protocol, this gives flexibility to either increase the maximum pay out period, or the pay out, without impacting the premium.

8.4 Calculations for pathway 4 – Medisave Withdrawal Cap

We assume that we want to target that the individual covers 30% of a $3000 a month disability costs (in today's dollars) from ElderShield. Using our inflation assumptions, we arrive at an inflated adjusted coverage of $1,630 (0.3 x 3000 x 1.02^30). We are targeting those who do not qualify for government co-payment in recommendation 1.

These individuals pay $270 a month in premiums for basic coverage of $540 a month pay-out. We conclude that we need to target a supplemental insurance coverage of $1,090 (=1,630-540). Using one insurer's quoted rates (NTUC Income 2017), a premium of $660 is needed for a female (worse case) aged 40.

If we assume a dementia premium of $38 and the basic physical disability premium of $270 (both individually paid), then the amount needed in total premiums is $38 + $270 + $660 = $968.

This implies that the current Medisave Withdrawal Cap should be raised to $1000. This will nudge people toward buying $1090 supplemental coverage of physical disability without using cash, in addition to the $540 basic coverage.

9 Appendix – Country approaches to financing LTC

9.1 The Netherlands

The long-term care insurance system in the Netherlands was first set up in 1968. Every citizen was covered under the Algemene Wet Bijzondere Ziektekosten (AWBZ); Exceptional Medical Expenses Act until 2014. Besides LTC, the AWBZ also covered all chronic care, particularly when large spending was required. Despite being quite successful, long-term care reform took place in 2015, intending to make people self-supporting as long as possible and save costs. The AWBZ was divided up into four separate acts. First, residential long-term care was made part of and is now part of the new Long Term Care Act (Wet langdurige zorg, Wlz). Second, insurers were put in charge for home nursing care, which is currently part of the Health Insurance Act (Zorgvenzekeringswet, Zvw). Third, social care or non-residential care is now available under the Social Support Act (Wet maatschappelijke ondersteuning, Wmo). Lastly, precautionary and mental health care for children was added to the thoroughly updated Youth Act (Jeugdwet). The main aim of the reform was to: "(1) save cost, and thus keep LTC affordable, starting with 500 million Euros in 2015, reaching savings of 3.5 billion Euros annually in 2018; (2) keep people self-sufficient for as long as possible - also given the high Dutch institutionalization rate; and (3) improve quality and coordination of care." (Van Ginneken & Kroneman 2015, p.48). In addition, there is no requirement to provide informal unpaid care in the Netherlands. However, this plays a role in the system. "The underlying philosophy of the Dutch system for the long-term care is that the state bears the responsibility for the elderly and others who are in need of long-term care." (Mot et al. 2010). In the Netherlands, ex ante funding sources are the main source to generate 90 percent of long-term care spending (Costa-Font et al., 2015).

9.2 Norway

Norway, like other Scandinavian countries, provides coverage for long-term care services through a social democratic model and everyone is qualified for long-term care services through municipal programs. The model is financed through general revenues. Norway has an international recognition for being a good example of Scandinavian social democratic welfare regimes which reinforce the citizens' freedom of the family and market (Christensen 2012).

Universal public long-term care (LTC) scheme in Norway is tax-based, which is financed by national taxes but carried through at the level of municipalities. There is no standardized means-testing system. Depending on the care required, the system may require co-payments (OECD 2011b). Municipalities manage and finance primary health care, which includes rehabilitation services and long-term care (AARP 2006). According to the OECD (OECD 2011b), there is no definite criterion that defines eligibility for long-term care. Yet, there has to be an urge for so-called "required health care", which also has to be secured by municipalities. Thus, in Norway, there is no long-term care insurance because the national insurance scheme is purely egalitarian. Norwegians pay 80 percent of his or her disposable income while in a nursing home stay. Consequently, the need for long-term care insurance is felt less (Bocquaire n.d.).

The OECD report (OECD 2011b) shows that, in 2009, overall long-term care costs were NOK 75 Billion (EUR 8.7 billion). The point of financial supply for about NOK 5 billion (EUR 0.6 billion) of this amount were co-payments or private sources. In this regard, municipalities, within legal boundaries, are free to impose co-payments for nursing home care and home assistance.

9.3 Germany

Germany built a compulsory long-term care insurance scheme, which specified benefits and coverage for everyone who needed long-term care with the Long-Term Care Act in 1994. (OECD 2013). It stands as a classic example of social insurance approach to finance LTC costs. (Nadash & Cuellar 2017). This Long-Term Care insurance program is a pay-as-you-go system, which is funded by mandatory contributions and retiree premiums. The contributions are income-dependent and shared equally between employees and their employers. Since July 2008, the standard contribution for workers with children is 1.95 percent of the first 44,550 Euros of income and 2.20 percent of that same amount for workers who do not have children. The German government pays the entire contribution for those who aren't working through the unemployment insurance fund. Retirees typically contribute half of the cost of their premiums, and their pension funds pay the remainder (American Academy of Actuaries 2015). Financing of social services is taken care of by the municipalities (Bocquaire n.d.).

In the beginning of 2017, the mandatory cover was subjected to extensive reform with the goal of reframing the definition of care. As a result, a new "in need of care" definition was presented. The reform also included a new evaluation instrument, which consists of six modules: mobility, cognition, behaviour, self-sufficiency, treatment/therapy, everyday life. This is assumed to help determine the need for care, thus adjust funding accordingly.

9.4 Japan

The system for long-term care in Japan was introduced with a universal Long-Term Care Insurance (LTCI) program in 2000 ('Kaigo Hoken' in Japanese). The system is similar to the LTC financing systems in the Netherlands and Germany. In Japan, it is one of the three pillars of social security scheme. Healthcare and pensions are the other two pillars of the scheme. This insurance program covers both home health and institutional care (American Academy of

Actuaries 2015). In Japan, private long-term care insurance has a role of additional coverage and is not popular.

Japan has a pay-as-you-go system, which is financed through compulsory social insurance, taxes, and co-payments. Thus, the funding source is diverse: taxes provide 45 percent of the funding, social contributions 45 percent, and cost-sharing 10 percent (OECD/EuropeanComission 2013). According to (Shimizutani 2014), "LTCI costs in Japan (including co-payments by clients) doubled from 4.0 trillion yen in FY2000 to 8.4 trillion yen in FY2011." In terms of the price and benefits framework, the national government determines that while the local government, municipalities, makes eligibility and benefits determination. There is no cash benefit, unlike the Dutch and German programs. People aged 40 years or above pay contributions to social insurance, which are reviewed every three years. The budget and the premium amount are also set for three years. Therefore, an annual budget does not always adjust. "When surpluses occur, they are saved in the Long-term Care Benefits Fund for use against future deficits. If deficits are severe enough to exhaust the funds, loans are made from the Fiscal Stabilization Fund, which is managed by prefectures." (Olivares-Tirado & Tamiya 2014).

According to the OECD (OECD/EuropeanComission 2013), "Japan has the highest projected share of the population aged over 80 years in the world for 2050." In the face of this estimation, Japan was successful in curbing long-term care (LTC) spending at 1.2 percent of Japan's GDP in the year 2010, which was substantially below the extensive LTC systems of other countries, for instance the Netherlands (3.7% of GDP). However, based on the 2011 OECD projection, Japan's government expenditure on long-term care is forecasted to more than double, which can indeed reach 4.4 percent of Japan's GDP in 2050 (OECD/EuropeanComission 2013).

9.5 South Korea

First established in 2008, South Korea is one of the first countries to implement a social long-term care insurance (LTCI) program. One year after, 5.2 percent of the senior population aged 65 years and above benefited from LTCI (Won 2012). The program is mainly a combination of the German and Japanese financing approaches. One special case to note is that the South Korean program has consistent benefits and contributions, which are ingrained in its single-payer, centralized health insurance system. The insuring agency is the National Health Insurance Corporation (NHIC). The NHIC manages LTC insurance together with health insurance. Similar to Japan, private LTC insurance in South Korea has not gained popularity among the South Koreans for the reason that they have an effective social insurance program. Therefore, there is no need to purchase private long-term care insurance.

As a rule, South Korea administers long-term care benefits to all citizens aged 65 and above, including those with geriatric diseases regardless of age. As for the types of benefits, LTCI in Korea grants in-kind benefits. Cash benefits can be given only if there are exceptional cases, such as places without a proper service infrastructure. Moreover, caring in facilities and group homes is part of the residential care benefits while home care benefits are granted for home help, home bathing, home nursing, day and night care, and short-term care (Won 2012).

Eligibility for long-term care and level of need are decided through statistical analysis of a questionnaire based on ADLs and a locally appointed committee reviews all the assessments. For the sake of sustainability, "the needs assessment became stricter for eligibility at levels one and two (severe condition), leading to a decline in the proportion of levels one and two from 42% (April 2010) to 23% (June 2016)" (Jeon & Kwon 2017). As is the case in Germany, at present there are three levels of functional limitations, each with a different level of benefits.

LTCI system in South Korea is financed by contributions from all participants through an aggregation of contributions from the insured, limited government subsidies, and co-payments from beneficiaries to the National Health Insurance Corporation (NHIC). The government subsidies are limited to 20 percent of anticipated contribution (OECD 2011d). The model to finance LTC costs was designed on an existing system created for funding other South Korean welfare programs, such as health insurance, pensions, workplace injuries and unemployment insurance. This has helped the government influence its existing system while providing efficient services. Thus, overall financing of the program consists of two parts. First, a government subsidy of 20 percent, co-payments of 15 percent (for home health) or 20 percent (for institutional care), and personal contributions that range from 60 percent to 65 percent.

10 Appendix – Structured Interview Questions

Thank you for agreeing to participate in this interview. We are doing this interview to try to find out how pre-retirees like you think about funding your retirement and your health and disability expenses in your old age. We'll be asking all kinds of questions about what your family circumstances are like, how you are planning or not planning for retirement, and your preferences for your retirement life.

Do you have any questions at this point?

This interview is completely confidential. At any moment, you are free to stop or refuse to answer any questions.

Before we continue, do you have any further questions? Otherwise, we will start.

Section 1: Warm-up and Basic Demographic Information

The first section is straightforward and I will give you a paper for you to fill in some basic questions about yourself and your household. If you have any questions about how to fill it up, please ask me.

Section 2 – General perception and expectations of interviewee's post-retirement life

In this section, we want to find out what you know about retirement planning, the options you have, and what you think retirement should be like. As you are reaching retirement age in 10 to 20 years, I hope you can share your ideas and concerns for your retirement life.

<table>
<tr><td>1</td><td colspan="2">When do you expect to retire?</td></tr>
<tr><td></td><td>Expected retirement age:

OR</td><td>• Cannot afford to retire
• Don't want to retire
• Want to keep active and working but will slow down
• Probably best to have some income after.
• Will retire when parents pass away</td></tr>
<tr><td>2</td><td colspan="2">What planning have you done for retirement?</td></tr>
<tr><td></td><td colspan="2">• No planning at all
• Vague/General idea or plan
• Preliminary thoughts on living arrangements, finance etc. without specifics
• Detailed planning – including calculations.</td></tr>
<tr><td>3</td><td colspan="2">What do you think you will be doing in retirement?</td></tr>
</table>

	[Prompt : For example, do you want to work? Do you plan to spend time with family? Any hobbies or activities that you intend to pursue?		
	Work: • Work part time • Volunteer work.	Family: • Spend time with children or grandchildren • Spend time with spouse • Spend time with siblings	Recreation: • Exercise more • Socialize more • Spend more / less time on travel • Spend more time on hobby or take up hobbies • Church work
4	**Do you see yourself staying in the same neighbourhood in your retirement?** [Prompt: do you like your neighbourhood?]		
	Willingness to stay • Strongly prefer to stay • Prefer to stay • Neutral • Prefer not to stay • Must move	Reason to stay • Convenience • Emotional attachment • Lack of choice • Vicinity to social support • Familiarity • Like the neighbourhood	Reason to move • Closer to family • Dislike neighbourhood • The need to downgrade • Want to live overseas
5	**What are your worries in retirement?** **[Prompt: Money, Health, Family, living arrangement, friends, emotional wellbeing] Add. Prompt: Do you expect an inheritance to help you?**		
	Worries about Money:		
	• Not enough CPF • Not enough savings • Not enough insurance • Not enough investment • House loses value	• For daily expenses • For medical costs • For further consumption (e.g. sustain hobbies) • For supporting family members	
	Worries about Health:		
	• Acute conditions • Long term sickness • Disability	• Ailment • Lack of independence • Lack of caregivers • Financial burdens	
	Worries about Family and living arrangement:		

	• Where to live • Who to live with	• Lack of independence • Lack of caregiver • Potential conflict with family members
	Worries about Social and emotional: • Boredom • Lack of friends • Generation gap with younger family members • Social exclusion	
	Or Worried but without specific thoughts OR General Quality of Life (QOL)	
	Not worried: • I don't think about it • I am well prepared • Something will come along, whatever will be will be • I expect to inherit something. So not as worried.	
6	**In your retirement, do you expect your children will support you?**	
	Yes • It is their filial duty • They are willing to do so	No/Not sure • Only if they can afford • It is up to them • I want to be independent
7	**Do you think about the possibility of getting disabled when you get old?** **[Prompt: how do you think it will be taken care of? How much do you think it will cost]**	
	Yes / No / No idea /Never think about it. Anything can happen	• The government will take care of it. • I need to take care of it. • I'm very healthy (or my parents/family are very healthy – some reason given). • Prepared to check into a nursing home • Good idea about cost (e.g. guess $1-2k a month)

		• Vague or don't know about cost • No idea about cost • Home based care (hire a maid)
8	**Do you think you need to change your habits and lifestyle to become healthier and avoid problems in your old age.**	
	Yes: • I need more exercise • I need to eat better • I need to eat less sugar (diabetes). • I need to quit smoking, drinking • I need to develop hobbies, social groups etc and maintain them when I retire. • My family has a history of bad health. • Health Checks	No: • I'm doing all the right things. • I don't care.
9	**Are you doing anything to improve your health or mental wellbeing now?**	
	Yes: • Physical exercise • More rest • More recreation activities • Healthy eating	No: • I don't think about it. • I don't have time. • Not doing enough
10	**Have you thought that you may need to depend on someone in your old age?**	
	Will depend on someone: • My [brother|sister|etc] will help me. • My children • My spouse	Do not depend on anyone • I have no one to depend on • I don't want to depend on other family members, and will make arrangement accordingly • I plan to move into an old folks home. • I plan to move into a nursing home
11	**Where do you think you will live in your older retirement years?**	
	• Current house all the way • Eventually move to children's place in Singapore • Eventually move to children's place overseas • Eventually move overseas • Eventually downgrade to smaller house • Eventually move to senior citizen home if needed / only as last resort	

<table>
<tr><td></td><td colspan="2">• Eventually move to a nursing home if needed / only as last resort</td></tr>
<tr><td>12</td><td colspan="2">Are you enrolled in ElderShield? Why or why not?

Prompt (later): Did you pay in cash or CPF? What other insurance policies?</td></tr>
<tr><td></td><td>Yes:

• It is a good scheme
• I didn't think through it when I got the letter.
• I follow the government.
• It doesn't take my cash. It's a small amount from CPF
• I paid in Cash
• I thought it was compulsory
• Did not understand it.</td><td>No:

• The payout seems too little.
• I will take care of myself.
• I think Medisave/MediShield is enough (this code is for mistaken idea)
• I made a mistake when filling up the form.
• I now regret it.
• 3 out of 6 ADL restrictive</td></tr>
<tr><td></td><td colspan="2">OR I don't know if I am in ElderShield.

OR just vague impression of what ElderShield is

OR it was explained to me then, but I can't remember.

OR wishes had taken up additional private insurance.</td></tr>
<tr><td>13</td><td colspan="2">When you are retired, do you expect the government to help your retirement?</td></tr>
<tr><td></td><td>Yes:

• I trust the government totally.
• The government must provide 100%.
• The government will help a bit.
• Help with policies and education
• I will rely on CPF
• Current levels of subsidies are ok.</td><td>No:

• I do not trust the government.
• The government will not provide 100%.
• I do not want to rely on government, would like to take care of myself.
• I have enough for myself and do not need the government's help
• Government's "help" eventually come from our own pocket</td></tr>
</table>

Section 3 – Relating to preferences for housing monetization

We are moving on to the last section. This section is about your preferences in making use of your house to help finance some of your retirement needs, especially if you need money to help you support disability or long-term sickness.

<table>
<tr><td>1</td><td colspan="2">Do you want to leave money or house to your children or anyone else?</td></tr>
<tr><td></td><td>Yes:

• I prefer to leave a bequest
• I must leave a bequest
• I prefer to leave them my house
• I must leave them my house.
• I want to leave some money to someone/something else (charity etc).</td><td>No:

• No one to leave it to
• My children should take care of themselves
• I will not have anything left for them.</td></tr>
<tr><td></td><td colspan="2">Or: Haven’t thought about it. Or: answer is “yes”, but does not indicate strong desire.</td></tr>
<tr><td>2</td><td colspan="2">To get more money in retirement, will you consider moving somewhere else and sell your home?</td></tr>
<tr><td></td><td>Yes:

• Only if I really need the cash
• I prefer living with my children
• My children would want me to
• I am moving overseas/sibling’s place
• I am moving to senior citizen home
• I am moving to nursing home</td><td>No:

• I have no children
• I prefer living on my own.
• My children would not want me to.
• I don’t need the money.</td></tr>
<tr><td></td><td colspan="2">Or: Haven’t thought about it.</td></tr>
</table>

3	**To get more money in retirement, will you consider renting out a room in your house, while you still live in it?**	
	Yes: • I don't mind at all • Only if tenants are nice • Only as last resort	No: • I don't like it and will not consider it • I don't need the money
	Or: Haven't thought about it.	
4	**To get more money in retirement, will you consider downgrading your house to a much smaller one?**	
	Yes: • I don't mind at all • Only if the new house is nice • Only as last resort	No: • I don't like it and will not consider it • I don't need the money
	Or: Haven't thought about it.	
5	Please rank your preferred housing monetization options here, from most preferred to lease preferred **Prompt by asking for pairwise comparisions if difficulty in ranking overall.**	
	( ) Selling House ( ) Renting a room out ( ) Downgrading to smaller one	

<table>
<tr><td>6</td><td colspan="2">Have you heard of HDB scheme like LeaseBuyBack and SilverHousingBonus?

What do you think of them?</td></tr>
<tr><td></td><td><u>Heard of LBB:</u>

• No
• Yes, only in name
• Yes, but only vague idea
• Yes, understand what it is</td><td><u>Heard of SHB:</u>

• No
• Yes, only in name
• Yes, but only vague idea
• Yes, understand what it is</td></tr>
<tr><td></td><td>Likes LBB:

• Will take up</td><td>Likes SHB:

• Will take up</td></tr>
<tr><td></td><td>Dislike LBB:

• Money goes to CPF, not cash
• I may outlive the lease</td><td>Dislike SHB:

• Money goes to CPF, not cash
• I prefer larger flats</td></tr>
<tr><td></td><td colspan="2"><u>Or</u>: Heard about it, but haven’t thought about it.

Or: Might as well just downgrade. Achieve desired effect without strings.</td></tr>
<tr><td>7</td><td colspan="2">Have you heard of reverse mortgage? What do you think of it?</td></tr>
<tr><td></td><td colspan="2"><u>Heard of reverse mortgage:</u>

• No
• Yes, only in names
• Yes, understand what it is</td></tr>
<tr><td></td><td><u>Likes reverse mortgage</u>:</td><td><u>Dislike reverse mortgage</u>:

• It is quite risky</td></tr>
</table>

	• Will take up	• It is very risky
	Or: Heard about it, but haven't thought about it.	
	[Present Micro-Credit slides]	
8	**Are you willing to borrow 20% of your house value for your retirement or old age care and pay back after you pass away when you sell your house? There is no chance you will lose the house.**	
	Yes: • Good idea, I will take up • Worth considering	No: • I don't understand it and I don't trust it • It is too risky because interest is high • It is too risky because housing price is unpredictable • Don't like debt.
	Or: I don't know.	
9	**Are you willing to borrow 50% for your retirement or old age care and pay back after you pass away when you sell your house? There is some small chance you lose the house.**	
	Yes: • Good idea, I will take up • Worth considering	No: • I don't understand it and I don't trust it • It is too risky because interest is high • It is too risky because housing price is unpredictable • Don't like debt.
	Or: I don't know.	
10	**Are you willing to borrow 80% for your retirement or old age care and pay back after you pass away when you sell your house? There is some chance you lose the house.**	

	Yes: • Good idea, I will take up • Worth considering	No: • I don't understand it and I don't trust it • It is too risky because interest is high • It is too risky because housing price is unpredictable • Don't like debt.
	Or: I don't know.	

11 Appendix – Features of Micro-credit Scheme

Our research examines the relative attractiveness of different housing monetization options to the pre-retiree population. To address possible objections to housing monetization, we include a novel scheme, the Micro-credit Scheme, which may address these objections. It is similar to a reverse mortgage, except that one cannot take out a lump sum in cash, but to use it to pay for specific services, while the government helps the householder to manage their liabilities.

The table below lists the main features that we designed to address concerns on housing monetization.

Table 11 Objections to Housing Monetization and How Micro-credit Scheme may address the issues

Possible Issues Preventing Housing Monetization	*Approaches to address these issues in Novel Scheme*
The need to leave a bequest.	Allow the purchase of life insurance and annuities (up to a capped amount).
The need to age in place in a familiar community.	House remains owned and lived in. Liabilities are paid off only after house is sold.
Longevity risk: one may outlive the lease of the house.	Accumulate liabilities incrementally. Case worker to help manage. The government can still step in after suitable evidence of self-help.

Interest Rate Risk: interest may reduce housing equity significantly.	HDB to guarantee a floor value to the house. This makes the loans almost riskless and lowers interest rates, at little cost to the government.
Property Price risk.	HDB guarantees a floor value to the house. HDB market is controlled by HDB.
Spend too much.	A case worker will act as a trusted advisor. Statements and bills will break down costs, subsidies, and project future liabilities to engage saliency bias. Insurance purchases to segregate guaranteed "savings" up front. The scheme allows only incremental expenditures.
Individual/Family/Government responsibilities	Include most existing subsidies under this scheme. Allow individuals/family/government to top up account. Services are co-paid with means tested subsidies.

12 Appendix – Data from Department of Statistics Singapore

The department of Statistics Singapore does not release their raw data on household surveys. However, on request, they will do subqueries for you. We have asked for 2 such queries.

The first query was to determine the household per capita income of households with at least one household member aged at least 65. The idea was to match this against government subsidies (which are based on household per capita income) and determine the coverage of the subsidies on prospective users of the subsidy at the current time.

The second query was to ask for housing types for households which only have senior individuals in them (i.e. the entire household is aged 65 and above). This was to determine how impactful would a housing monetization option be, such as downgrading.

Table 12 Resident Households by Household Characteristics and Monthly Household Income from Work Per Household Member, 2016 Source: Department of Statistics Singapore

Thousands

Household Characteristics	Total	No Working Person	Below $250	$250 - $499	$500 - $749	$750 - $999	$1,000 - $1,499	$1,500 - $1,999	$2,000 - $2,499	$2,500 - $2,999	$3,000 - $3,499	$3,500 - $3,999	$4,000 - $4,499	$4,500 - $4,999	$5,000 - $5,499	$5,500 - $5,999	$6,000 & Over
At least one member aged 65 years & over	376.8	97.8	4.9	13.8	23.4	20.7	45.9	37.8	30.1	23.3	18.4	14.1	11.3	8.6	6.1	3.8	16.9

Note: Household income from work includes employer CPF contributions.

Table 13 Resident Households (in thousands) with All Members Aged 65 Years & Over by Type of Dwelling, Household Size and Tenancy, 2012, 2017. Source: Department of Statistics Singapore

Type of Dwelling	Total			1 Person			2 Persons			3 or More Persons		
	Total*	Owner	Tenant	Total*	Owner	Tenant	Total*	Owner	Tenant	Total*	Owner	Tenant
2012												
Total	74.0	61.9	11.5	31.2	24.0	7.0	38.1	33.5	4.2	4.7	4.4	0.3
Total HDB[1]	61.9	50.8	10.7	28.1	21.2	6.7	31.7	27.7	3.8	2.1	1.9	0.2
1- and 2- Room Flats[2]	14.0	3.9	10.1	8.8	2.5	6.3	4.9	1.3	3.6	0.3	0.1	0.2
3-Room Flats	24.6	24.0	0.5	12.2	11.8	0.3	12.0	11.8	0.2	0.4	0.4	0.0
4-Room Flats	15.3	15.3	0.0	5.1	5.1	0.0	9.5	9.4	0.0	0.8	0.8	0.0
5-Room and Executive Flats	7.6	7.5	0.1	1.9	1.8	0.1	5.2	5.1	0.0	0.6	0.6	0.0
Condominiums and Other Apartments	5.8	5.2	0.5	1.8	1.5	0.3	3.0	2.7	0.2	1.0	0.9	0.0
Landed Properties	6.0	5.6	0.2	1.4	1.2	0.0	3.0	2.8	0.1	1.6	1.5	0.1
Others	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2017												
Total	129.4	113.8	14.4	53.8	43.6	9.7	63.6	58.9	4.1	12.0	11.3	0.6
Total HDB[1]	110.3	96.1	13.4	49.1	39.5	9.3	53.4	49.1	3.8	7.8	7.5	0.3
1- and 2- Room Flats[2]	22.2	9.7	12.4	14.6	5.8	8.7	7.0	3.5	3.4	0.6	0.3	0.2
3-Room Flats	37.2	36.4	0.6	18.4	17.9	0.6	16.8	16.5	0.1	2.0	2.0	0.0
4-Room Flats	31.8	31.2	0.4	11.3	11.1	0.0	17.6	17.3	0.3	2.9	2.8	0.0
5-Room and Executive Flats	18.9	18.6	0.0	4.7	4.6	0.0	12.0	11.8	0.0	2.3	2.3	0.0
Condominiums and Other Apartments	10.4	9.4	0.6	2.7	2.3	0.2	6.0	5.7	0.2	1.7	1.4	0.2
Landed Properties	8.2	8.0	0.1	1.7	1.7	0.1	4.0	3.9	0.0	2.5	2.4	0.1
Others	0.5	0.3	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0

[1] Includes non-privatised Housing and Urban Development Corporation (HUDC) flats.

[2] Includes HDB studio apartments

* Includes resident households in dwellings provided free by employers/others.