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Capital Funding for Elderly Care

Alternative Systems for Financing the Dutch Elderly Care: Lessons from International Experiences

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Alternative systems for financing the Dutch elderly care: Lessons from international experiences

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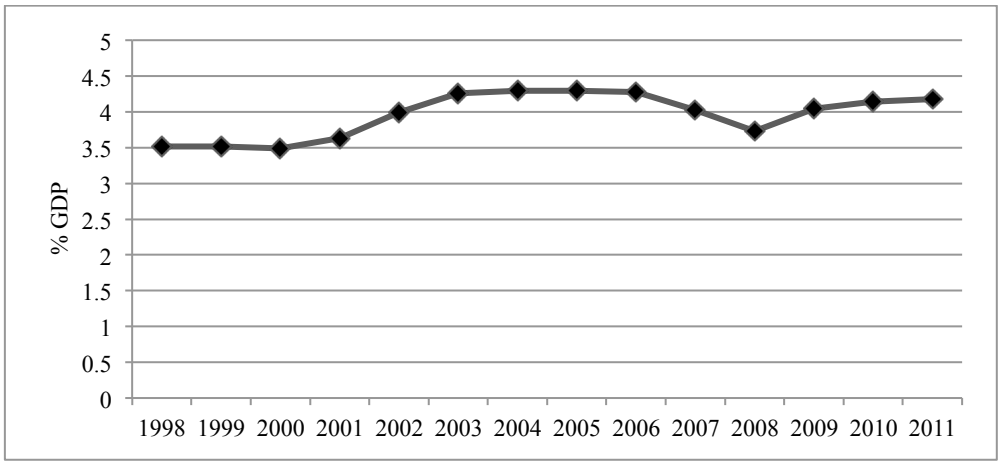
Abbreviations

AHIP	America's Health Insurance Plan
AMA	Australian Medical Association
ANCIEN	Assessing Needs of Care in European Nations
ANP	Algemeen Nederlands Persbureau
APRA	Australian Prudential Regulation Authority
AWBZ	Algemene Wet Bijzondere Ziektekosten (general law on exceptional medical expenses)
CBS	Central Bureau of Statistics
CFP	Central Board of Provident Fund
CIA	Central Intelligence Agency
CPB	Central Plan Bureau
FSA	Flexible Saving Account
GDP	Gross Domestic Product
HPA	Health Protection Account
HRA	Health Reimbursement Account
HSA	Health Saving Account
MSA	Medical Saving Account
NCMS	New Cooperative Medical Scheme
OECD	Organization for Economic Co-operation and Development
RRSP	Registered Retirement Savings Plan
RVZ	Raad voor de Volksgezondheid en Zorg
VWO	Voluntary Welfare Organization
WHO	World Health Organization
WMO	Wet Maatschappelijke Ondersteuning

Chapter 1: Introduction

Under the Dutch system, elderly care[1] is mostly financed through the General Exceptional Medical Expenses Act (AWBZ). The AWBZ is a law to ensure that all Dutch residents pay contributions towards exceptional medical expenses, such as care for the disabled, which cannot be covered on an individual basis. The contributions are paid through the income tax (Mot et al., 2010). It is a pay-as-you-go system, where the contribution for the whole AWBZ is 12.15% for every working citizen over a salary up to 33,863 euro. As a comparison, this is almost as large as the contributions for the Dutch state pension (17.5%).

Over the past ten years the expenditures on the AWBZ have risen almost 38% (OECD, 2008). In 2011, the AWBZ expenditures account for more than 4% of GDP (CBS, 2012). In fact, the AWBZ should have risen further than 4%. Because a part of expenditures under the AWBZ was moved to the WMO (The Law on Social Assistant) in 2007[2], the AWBZ expenditures still remain at approximately 4.2% of GDP in 2011. This is shown in figure 1.1 below.



Source: CBS statline (2012)

Figure 1.1: AWBZ expenditures as percentage of GDP

One of the main causes of this increase is population ageing. In 2011, the Central Bureau of Statistics (CBS) shows that the AWBZ expenditure is 24.6 billion euro. Out of this number, the expenditure for elderly care is 16.1 billion euro (Niesing, 2012). Furthermore, population aging is expected to increase in the future. The Central Bureau of Statistics (CBS, 2011) predicts that the number of people older than 65 will increase from approximately 2.5 million in 2010 to 4.6 million in 2040. This would mean higher costs of elderly care in the Netherlands.

[1] Elderly care refers to long-term care, which cover the provision of nursing care and administration of social services that assist people living with disease and.
[2] The cost in 2007-2008 went down because the domestic help that used to be part of AWBZ was shifted to WMO (the Law on Social Assistance).

The rise of elderly care costs combined with a relative shrinking of the number of contributors because of population aging creates a financial system which is in deficit. Therefore, the system might not be sustainable in the long run since elderly care expenditures are expected to increase faster than the availability of funds from taxation.

Faced with the problem of unsustainability, the Dutch government is trying to find alternative options to handle this dilemma. Different solutions have been proposed, for example: linking the insurance premium with age; increasing co-payments; increasing insurance deductibles or technological innovations. Another possibility is to shift from the current pay-as-you-go system to a capital funding system.

Under the capital funding system, savings are used to finance health or elderly care expenditure instead of using tax or insurance premiums. Such capital funded systems already exist in several countries, for example in Singapore, India, China, South Africa and the United States. While the success of this system has been disputed, it has drawn international attention. Some countries have drafted proposals of capital funded systems, such as Australia, Hong Kong and Canada.

The Netherlands cannot replicate such a system without modifications, as there are many different factors that could influence the design of the system. Prior to implementing such a system in the Netherlands, a cost-benefit analysis as well as an impact assessment needs to be conducted. There are advantages and disadvantages in shifting from elderly care funded by a pay-as-you-go system to a capital funded system. Experiences of countries that previously implemented the system should be taken into consideration. Different characteristics of the system could lead to different outcomes. Furthermore, economic trade-offs should be considered before introducing the system.

The considerations above on the different aspects of the Dutch elderly care reform lead to the main research question of this thesis.

- If capital funding for elderly care were introduced to the Netherlands, how could the system be implemented?

The research sub-questions for this study are:

- Which dimensions can be distinguished in the capital funding for elderly care so that a typology for capital funded elderly care can be developed?
- What are the main economic trade-offs in designing a system for financing elderly care?
- What are relevant international experiences on capital funding for health care?
- Which design of financing elderly care suits the Netherlands best?

There is a large body of literature on elderly care financing systems, capital funding for health care and capital accumulation for social insurance. This research will draw on this literature.

As regards the financing for elderly care, aging is the greatest challenge and an important factor behind the rise in demand and expenditure (Forder and Fernandez 2010). As a result, there is a need for policies or proposals that could provide incentives for private financing of elderly care (Academy Health 2007). Recent research by Forder and Fernandez (2011) contains a proposal for elderly care financing system reform in England. Studying the international experiences of France, Germany, Japan and Australia, they suggest that it would be more beneficial for England to adopt a universal care funding system rather than a means-tested benefits system. Even though the system does not seem appealing from a political perspective (because of higher costs and tax payments), it might be a better option considering market failures and solidarity factors. In view of the small market of elderly care insurance in the United States; Brown and Finkelstein (2007) study supply and demand of private elderly care insurance. They provide evidence of market failures that limit the growth of the elderly care insurance market. They conclude that market failures exist on both the supply as well as the demand side. In addition, Barr (2009) argues that actuarial mechanisms are not well suited for addressing the risks associated with elderly care, particularly the uncertainty and risk that a person will need such care. Therefore, purely self-finance is not an ideal solution, but some degree of risk sharing could enhance welfare. Furthermore, Gale et al. (2004) explore trends effecting financial security during retirement; examines the financing of long-term care; and explores the role of pension saving in preparing for financial needs, including long-term care. The study concludes that too many individuals are not saving enough for retirement, and many individuals are not protecting themselves against the risk of long-term care cost.

With limited international experiences of capital funding for elderly care, it is more beneficial to draw lessons from the capital funding systems that focus on health care in general. Massaro and Wong (1996) provide arguments in favor of a capital funding system in Singapore. They argue that the system provides incentives to reduce consumption and improves the health status of the population. They also state that Singapore has a well-organized system; a saving orientated population; strong economic growth and a suitable level of government intervention, which could lead to a successful implementation of a capital funding system. Additionally, the research of Hanvoravongchai (2002) is an important source of information regarding capital funding for health care. He studied the capital funding for health care systems in Singapore, China, the United States and South Africa. Quantitative analysis shows that Singapore has significantly lower total health expenditure per capita than other OECD countries. Conversely, Saltman (1998) strongly opposes the idea of capital funding for health care. He notes that the system is not a feasible policy option for developed countries to maintain economically efficient or socially responsible health care systems. According to him, introduction of

capital funding will put the current health-financing situation in adversity. In contrast, Henk and Borchart (2003) strongly support the idea of reforming health care financing systems from a pay-as-you-go system to a capital funding system. They analyze advantages and disadvantages of these systems. Then, they suggest guidelines of reform for different European countries. The capital system could partially be introduced along with adjustments in the health service providers. Meanwhile, the government should maintain employment and growth at an appropriate level. Still, capital funding for health care system is not an ideal solution, considering higher health costs resulting from the technology advancement and the increase in life expectancy.

The issue of capital funding for elderly care systems is somewhat similar to the issue of saving for social insurance. It is important to review literature related to this topic as well. Bovenberg and Sørensen (2003) study behavioral and welfare effects of mandatory saving accounts. They found that an introduction of early retirement and unemployment accounts helps the government to manage and provide social insurance more efficiently. Feldstein and Altman (1988) propose saving accounts for unemployment insurance. They use a panel study on income dynamics to simulate a saving system for unemployment insurance. They found that saving accounts increase incentives for unemployed individuals to search for a job. However, the decision to work still depends on the generosity of unemployment benefits. Fölster (2000) evaluates the consequences of replacing public financed social insurance systems with social insurance saving accounts using income panel data for Sweden and a simulated sample. He concludes that saving accounts may rather be appropriate for education, unemployment and health.

Drawing on the previous literature, this research is going to summarize experience with capital funding for elderly care and health care systems. Focusing on elderly care, the countries that already have a capital funded system for elderly care are Singapore and India. Moreover, there is also a proposal for capital funding systems planned specifically for elderly care in Hong Kong and Australia. Also, the capital funding for health care systems in China, the United States, South Africa and Canada are mentioned in this study. In this respect, the parallel characteristics of capital funding from various countries can be adjusted to suit the need of elderly care financing in the Netherlands. Hence, this research will use the information from these international experiences to find possible alternative financing systems for elderly care in the Netherlands.

The thesis is organized as followed. In chapter 2, the dimensions that distinguish the capital funding systems will be defined. Afterwards, these matrices will function as a framework to arrange the information on each country. Subsequently, the research will discuss economic trade-offs in chapter 3. This chapter will focus on the economic advantages in choosing one option of implementation over another. Chapter 4 presents analysis of international experiences based on the matrices and economic trade-offs of chapter 2 and 3. The analyzed countries are Singapore, India, Hong Kong, Australia,

China, the United States, South Africa and Canada. Finally, in chapter 5 the thesis will review the current debate on the AWBZ system of the Netherlands and the possibilities to reform the system in the direction of a capital funded system. The resulting policy recommendations for the Netherlands will also be discussed and proposed in this chapter.

Chapter 2: Matrices dimension

This chapter defines the dimensions of the matrices that are used for classifying key characteristics of the international experiences of capital funding for elderly care and health care.

Normand and Busse (2001) distinguish characteristics of the social health insurance system of selected European countries. They classify the system based on coverage, contribution rate, contributor, system management and mechanism for pooling or financial risk sharing. Mathauer and Carrin (2010) discuss the role or institutional design and organizational practice for health financing performance. They distinguish important characteristics of health care financing systems, and evaluate by using performance indicators and regulations assessment. The classification of performance indicators consist of the level of health care expenditure, the level of population coverage, the degree of financial risk protection, the level of equity in health care financing, the level of pooling across the health care financing system, the level of efficiency and equity, the level of effectiveness and equity considering the benefit package definition and administrative efficiency.

Based on the guidelines of previous literature and availability of information on different countries, this thesis constructs extensive matrices[3] to distinguish the characteristics of the capital funding for elderly care and health care system. There are six matrices in total as shown in figure 2.1. Each matrix contains different dimensions, which together create the framework for analysis.

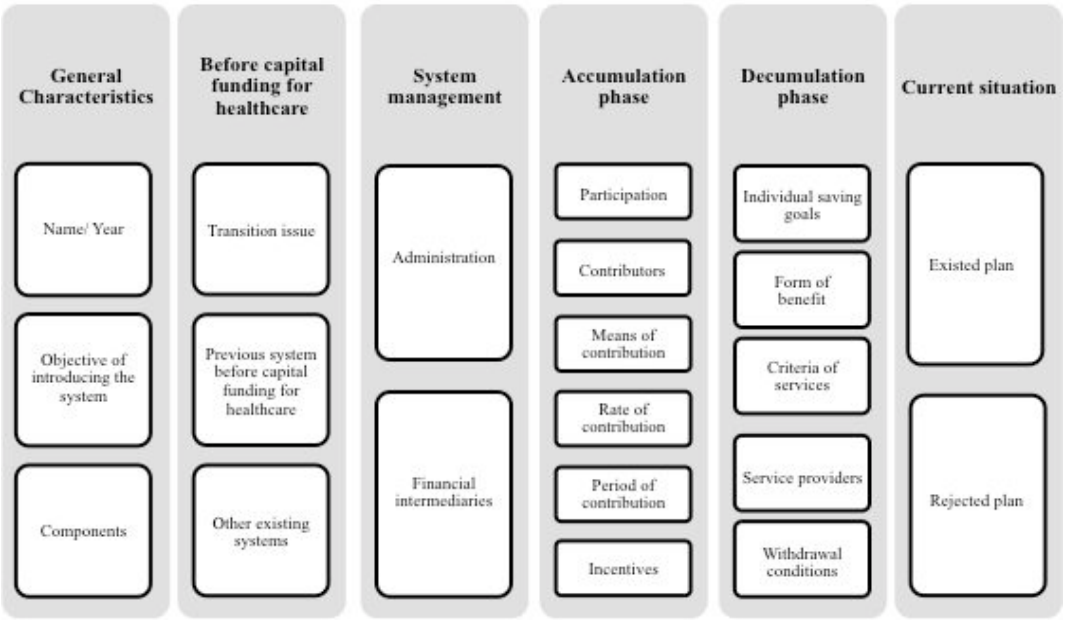


Figure 2.1: Dimensions of the typology matrices

[3] See the full version of typology matrices in Appendix I

The first matrix considers general characteristics of the system. The aim of this matrix is to define the position that the funded part occupies in the financing system. It contains the objectives and the components of the system. The second matrix looks at the transition process and the existing health care financing systems other than capital funding. The third matrix presents the management of the system, particularly the administration and intermediation. Then, the fourth and fifth matrices are the main elements of the classification. They look at the capital accumulation and decumulation of the financing systems. Last, the sixth matrix considers the current situation of the system as well as new drafted proposals.

The first matrix includes name and year of implementation, objectives and components of the system. Objectives of each system are different from country to country depending on problems of its previous and current financing systems. Apart from the objectives of the system, the most crucial part in this matrix is the components sub-matrix. The construction of this sub-matrix does not only distinguish the different components within a system, but it indirectly clarifies the types of risk sharing. To be more specific, each component of the capital funding system often relates to a certain risk. For example, the elderly care insurance relates to health and longevity risk. Within a system, there could be more than one component to serve preferences of individuals among different income groups and health statuses. In general the capital funding for elderly and health care system consists of an individual savings and insurance components. In addition, this capital funding system is also supported by the pay-as-you-go safety net for individuals who are unable to save for themselves.

The second matrix mainly discusses the previous health financing systems before the capital funding for elderly care and health care, the current existing systems and the transition issues. The main idea of this matrix is to investigate problems that the previous system encountered, and try to explore how the capital funding system could solve these problems.

The third matrix describes the management of the systems. The administration sub-matrix discusses whether the systems should be centralized or decentralized. It focuses on the authority that regulates the systems. The second sub-matrix presents financial intermediaries that manage the systems, which could be government, pension administrators, insurance companies or other set-up entities.

In the fourth column of figure 2.1, the accumulation matrix centers on how the capital flows into the system. The matrix consists of six sub-matrices, which are participation, contributors, means of contribution, rates of contribution, periods of contribution and incentives for participation. The participation matrix considers population coverage and enrollment. The contributors refer to sources of capital that are contributed to the system. The standard means of contribution is salary income. However, there can also be some other means of contribution such as home equity. The rates of contribution vary from system to system depending on the objectives of the system and demographic

factors. Similar to the rates of contribution, the periods of contribution depend on the objectives of the system as well. In most cases, the capital accumulation for elderly care starts from the age of being employed until the age of being retired. In addition, there are also incentives to encourage participation. Incentives for participation such as interest rate or tax treatment can alter not only the rate of contribution, but the period of contribution as well. The setting up of ceiling and floor levels of capital accumulation can also influence the rate of contribution without having a high degree of compulsion.

The decumulation of capital is in the fifth matrix. It presents the outflow of the capital from the system. Firstly, it considers the benefit package presented in the first three sub-matrices, which are individual saving goals, forms of benefit and criteria of service. The goals of saving sub-matrix refer to the decision of using individual savings account. It can pay for insurance premium or directly for medical services. As regards the insurance plan, the forms of benefit can be in cash or in kind. The benefits can be a lump-sum amount as reimbursement or a periodically payment as a care annuity[4]. The benefits can also be in kind, namely individuals receive health services directly without involving in money transaction. This can be an agreement between insurance companies and care service providers. In many systems, the criteria of health service are set up to avoid the problem of insurance over utilization and early exhaustion of individual saving accounts. Last, there are also conditions with respect to the withdrawal of funds. For example, the required minimum balance and period of capital accumulation before the funds can be withdrawn. This is to prevent an early exhaustion of fund in the savings account.

The sixth matrix presents the current situation of the system. Particularly, it discusses the existence of the capital funding for health care system as well as its success. In addition, it also discusses the proposals that were rejected, and a new proposal to replace the capital funding for health care.

With these matrices, they will be used as a framework for the following chapters. The main utilization of these matrices is to classify and compare the capital funding for health care systems in different countries. The full version of these matrices can be found in Appendix I.

[4] The Singapore's elderly care insurance (Eldershield) benefit pays out as an annuity for periods of 60 months up to 72 months. Individuals can start claiming benefits when elderly care is needed (e.g. become disabled or start receiving elderly care).

Chapter 3: Economic trade-offs

This Chapter presents economic trade-offs related to the capital funding for elderly care. It distinguishes various factors that could influence characteristics of a system, namely: social and individual conditions; market conditions and political situations. The main characteristics are (1) degree of compulsion (2) intra generational risk sharing and (3) generosity of safety net benefits.

The design of "the economic trade-offs tables" is based on the framework of "Challenging neighbors; rethinking German and Dutch economic institutions" by the CPB (1997). The book describes the trade-offs to be made when designing social security plans, pensions schemes or health care systems.

This study applies this framework to study capital funded social insurance. Firstly, it will discuss the freedom of choices in a number of individual's decisions involving capital funding for elderly care. Subsequently, it will study features of both intra generational risk sharing, and, generosity of the safety net. Lastly, it will discuss intergenerational risk sharing.

By exploring the economic advantages between each characteristic based on economic theories and international experiences, this thesis will suggest a guideline for the possible alternative options for financing elderly care in the Netherlands.

Degrees of compulsion

This topic discusses the economic trade-offs for the degree of compulsion of capital funding for elderly care. These trade-offs can apply to several decisions in saving for elderly care, namely: participation; the saving rate; the period of saving; the benefit package; the means of saving; the choice of the financial institution and health service providers. Additionally, it also summarizes the conditions affecting the trade-offs between compulsory and voluntary decisions. That is, it will discuss under which circumstances one or either side of the trade-off is more pertinent.

The first part of the table 3.1 discusses the five important economic trade-offs in having the differing degrees of freedom. The relevant trade-offs are: facilitating solidarity versus tailoring to heterogeneity; preventing adverse selection versus preventing moral hazard; preventing individual failures versus facilitating freedom of choice; increasing incentives to save versus protecting incentives to supply labor and exploiting economy of scale versus encouraging competition.

			Compulsory	Voluntary
Trade-offs			1. Facilitating solidarity 2. Preventing adverse selection 3. Preventing individual failures 4. Increasing incentives to save 5. Exploiting economics of scale	1. Tailoring to heterogeneity 2. Preventing moral hazard 3. Facilitating freedom of choices 4. Protecting incentives to supply labor 5. Encouraging competition
Decisions	Trade-offs[5]			
Accumulation phase				
A. Participation	1-5		compulsory	(non) automatic
B. Saving rate	1-5		uniform rate progressive rate	default rate max/min limit of saving future commitment
C. Saving period	1-5		employment period retirement period	voluntary choice
D. Mean of saving	1, 3, 5		percentage of income	voluntary choice
E. Contributor	1-3, 5		government employer/ employee	voluntary choice
F. Financial institution	2, 5		government/ pension provider	bank/ insurance company
Decumulation phase				
G. Insurance	1, 3, 5		compulsory	voluntary choice
H. Form of benefits	1, 3, 5		in kind/ in cash (lump-sum/ annuity)	voluntary choice
I. Criteria of service	1, 2, 3		compulsory	voluntary choice
J. Service provider	1-3, 5		public health providers	private health providers
K. Financial institution	2, 5			bank/ health insurance company
Conditions	Trade-offs	Decisions		
Social/ Individual				
Preference for equity	1-4	A-C, E	high	low
Risk aversion	1-4	A-H	high	low
Intertemporal decision making	1-4	A-C, F	prudent	myopic
Population				
Age	1, 3-4	A-H	older	younger
Health	1, 3-4	A-H	homogeneous	heterogeneous
Income	1, 3-4	A-H	homogeneous	heterogeneous
Market				
Financial market	2, 4-5	B, D, G	not well developed	well developed
Health market	2, 3-5	F, H	not well developed	well developed
Information about risks	2-5	A-H	asymmetric	symmetric
Information cost	2-5	A-H	high	low
Labor supply	4	A-F	inelastic	elastic
Political				
Political process	1-5	A-H	efficient and stable	inefficient and unstable
Degree of freedom	3	A-H	low	high

Table 3.1 Trade-offs for choices between compulsory versus voluntary elements

Facilitating solidarity v Tailoring to heterogeneity

Solidarity means integration within a society. One is willing to help another. With regards to elderly care, it is a preference towards equity and also accessibility to elderly care services. It is about both willingness to share income, longevity and health risks, and also how to protect individuals who are unable to finance their care costs. By applying a compulsory mechanism to the specific decisions, solidarity is deliberately facilitated.

On the other hand, individuals also differ. They have different cultural backgrounds, and live in different environments. As a consequence, they tend to have different needs for health care services

[5] Trade-offs and decisions columns link all the three parts in the table 3.1 together. In trade-offs column, 1-5 means from 1 to 5 while 1,5 means 1 and 5. This also applies to capital letters in the decisions column as well.

and medical treatments. Hence, a more voluntary system allows for a variety of options for saving in capital funding for health care to accommodate heterogeneous preferences of individuals.

Preventing adverse selection v Preventing moral hazard[6]

Compulsory mechanisms prevent adverse selection. With asymmetric information, individuals who know themselves better than insurance companies or financial intermediaries would automatically choose to participate in a plan that benefits the most. For example, high-risk individuals, such as low income, elderly or poor health individuals would prefer to be in a risk-pooling plan. Equally, low risk individuals, such as high income, young or healthy individuals tend to prefer not to 'pool risks'. In this respect, a compulsory system would result in more risk sharing, hence preventing adverse selection.

On the other hand, voluntary mechanisms prevent moral hazard. In principle, a compulsory elderly care-financing scheme tends to encourage individuals to overuse health care services. There are two reasons for this.

(1) Individuals are mandated to participate in the system without considering the actual needs. As a result, those who do not need the care will still try to exploit the benefits by unnecessarily claiming care costs.

(2) Since health care cost risks are shared with others, individuals tend to engage in more unhealthy behaviors, and/or take more risk. Therefore, the provision of both more freedom of choice and individual saving accounts would assist in addressing this moral hazard.

On the other hand, the more voluntary system also gives rise to adverse selection. Considering insurance providers, the voluntary system allows for more competition, and hence there are more incentives for the insurers to cut the costs. One of many ways for insurance providers to lower the costs would be to select low risk participants, or engage in so-called 'adverse selection'.

Preventing individual failures[7] v Facilitating freedom of choice

A low degree of freedom prevents individual failures. In this case, individual failures refer to the low ability of individuals to assess risk and uncertainty, and willpower problems. A willpower problem[8] is a behavioral economics concept, and it explains individual failures within a health financing system for the most part. Immediate gratification and procrastination greatly influence several decisions in the capital funding for elderly care, namely: participation, saving rate and saving period. Complexity of

[6] See Chapter 12 in Intermediate Microeconomics: A Modern Approach by Varian (2005) for adverse selection and moral hazard in insurance market.
[7] Wheelan (2010) describes the role of government in acting as a parent, and protecting the children.
[8] Thaler and Shelfrin (1977) describe will power problem as low ability to resist temptation, which leads to immediate gratification and procrastination.

choices can also lead to procrastination. Therefore, a compulsory mechanism acts as a paternalistic tool to prevent individuals from harming themselves (Wheelan, 2011).

Conversely, a high degree of freedom applied to decisions of capital funding for elderly care, helps facilitate freedom of choice. As free will does exist in human nature, individuals should be free to make choices under a low level of constraint[9]. Individuals should be free to manage the use of their money and receive certain types of elderly care services in line with their preference. More freedom of choice mirrors the natural free will of human nature.

Increasing incentives to save v Protecting incentives to supply labor

Compulsory mechanisms under capital funding for the elderly care system encourages higher levels of savings. In light of individual failures in saving decision, mandatory systems help to reach a desired level of saving for each individual and as a whole.

However, it must be said that mandatory decisions, particularly one relating to the saving rate, can in fact distort incentives to supply labor. As the rate of saving is normally calculated progressively as a percentage of wage income, it acts as an implicit tax. Nevertheless, the distortion depends on the level of income as well as the domination of the substitution effect. Therefore, the lower the degree of compulsion, the more this would allows for flexibility in adjusting the plan to meet the labor situation of each individual.

Exploiting economy of scale v Encouraging competition

In a system with compulsory elements, the decisions are restricted, and hence the management of the system is less complex. It can easily achieve economy of scale; for example, the larger the pool of capital yields, the larger scale of return on investment. Service providers can provide bundling services, which lower the total costs. Additionally, a compulsory system reduces administrative costs.

On the other hand, with more freedom in participation and choosing financial service providers and health services providers, it creates more variety of options and choices. This encourages competitiveness among financial services and health service providers. Achieving a certain level of competition will lead to efficiency and lower costs which may therefore encourage innovation.

The degree of compulsion can apply to various decisions. These include the decision to participate, the desirable rate and the period of saving, the benefit package, the means of saving, the choice of both the financial institution and the health service provider. The second part of table 3.1 presents decisions

[9] See http://en.wikipedia.org/wiki/Free_will

focusing specifically on accumulation and decumulation phases. The decision could refer back to the systematic classification matrices[10] in the figure 2.2 of chapter 2.

The third part of table 3.1 presents the conditions that influence the capital funding system towards compulsory and voluntary decisions. This part is divided in 3 categories (1) social/ individual conditions (2) market conditions and (3) political conditions.

The social and individual conditions refer to the preferences and demographics of the society. With a strong preference for equity, high-risk aversion and, a prudent population, the situation is favorable for a higher degree of compulsion. An aging population implies a higher risk aversion society, which directs the system towards a compulsory system. In case of a high degree of heterogeneity within the population, namely a differing health and income, it is more suitable to have more freedom of choice to meet the needs of a diverse society.

The market condition refers to the state of development of a market. The lesser developed a financial and health market is, the more appropriate a system with a higher degree of compulsion would be. To put it differently, the voluntary system is suitable only for well-developed markets. Asymmetric information always comes together with high costs in obtaining information. In this case, when it is hard to identify and quantify risks, it is less costly and more suitable to have compulsory systems. Considering the labor market, an inelastic supply, in most cases, this indicates a prevalence of a high skilled labor market. High skilled labor is less sensitive to income changes. Meanwhile, elastic labor supply often falls into the low skilled labor category. The latter are more sensitive to income changes. To avoid volatility of funding and to maintain sustainability of the system, a country with a more inelastic labor supply is more suitable for the compulsory system.

In case of the incident of an efficient political process, it is more suitable to have a compulsory system as the legislations process would be less complicated. In a reverse situation, an inefficient political process calls for a voluntary system involving less bureaucracy and more private-sector involvement. At the same time, the higher degree of compulsion is also more desirable for the countries with a more powerful government.

In the next sections, the features of intra generational risk sharing related to the capital funding for elderly care will be discussed. The question of how risks can be mitigated will be discussed.

[10] See Appendix I

Intra generational risk sharing

This section discusses the particular types of risk that can be pooled under the capital funding system for elderly care. These are micro risks, namely health costs risk; longevity risk and income risk. The first part of the table 3.3 summarizes the economic advantages of different degrees of risk sharing. It consists of reducing an individual's risk versus preventing moral hazard, and, facilitating solidarity versus enhancing incentives to save and to supply labor. The second part defines the type of risks that can be pooled. These risks mostly refer to micro risks. The third part summarizes the conditions under which risk sharing or no risk sharing may be more appropriate.

			Risk sharing	No risk sharing
Trade-offs			1. Reducing individual's risk 2. Facilitating solidarity	1. Preventing moral hazard 2. Enhancing incentives to save and supply labor
Type of risk			A. health care cost risk B. longevity risk C. income risk	
Conditions	Trade-offs	Type of risk		
Social/ Individual				
Risk aversion	1-2	A-C	high	low
Individual uncertainty	1-2	A-C	high	low
Market				
Information about risk	1	A-C	symmetric	asymmetric
Information cost	1	A-C	low	high
Labor supply	2	C	inelastic	elastic
Elderly care usage	1	A,B	low	high
Political				
Political process	1-2	A-C	efficient	inefficient
Altruism	2	B,C	strong	weak

Table 3.2 Trade-offs for micro risk sharing

Reducing individuals' risk v Preventing moral hazard

Risk sharing helps reducing an individual's risk because there are more parties to share both the burden of loss and the benefit of gain. Consequently, the insurance pool is formed by the contribution of all plan participants and it will be withdrawn from a particular participant who faces the loss. In other words, plan participants are insured against all risks.

However, a higher degree of risk sharing is subject to moral hazard. In theory, moral hazard often refers to an individual's tendency to engage in activities that are more risky because there are other parties with whom to share the risks[11]. Therefore, a low degree of risk sharing also prevents a moral hazard issue.

Facilitating solidarity v Enhancing incentives to save and supply labor

[11] See Chapter 12 in Intermediate Microeconomics: A Modern Approach by Varian (2005) for moral hazard in insurance market.

Intra generational risk sharing helps facilitate solidarity within society. Particularly, it enhances health equality and service accessibility for the different health and income groups. In this case it facilitates health risk sharing.

On the other hand, a lower degree of income risks sharing provides more incentives for individuals to save more for themselves. Individuals can insure themselves against their elderly care cost risk. Furthermore, there are also fewer distortions on labor supply since the contributions, as a percentage of wages, are going directly to the benefits of the contributor.

However, in both scenarios of 'with or without risk sharing', individuals directly insure against the loss of human capital[12] over their lifetime. Elderly care premiums will be collected in advance during the working period before an occurrence of sickness. As a result, patients will be able to finance their care service costs from their saving, even though they are unable to supply their labor for any longer. In this case, the risk of human capital is diversified over the lifetime.

The third part of the table 3.3 contains three main conditions that direct the system towards a more or less intra generational risk sharing. They are (1) social/ individual conditions (2) market conditions and (3) political conditions.

In the case of social/ individual conditions we consider risk aversion. Risk aversion is directly associated with age. This tends to direct the system to a high degree of intra generational risk sharing. In addition, with heterogeneous individual uncertainties on elderly care usage; a higher degree of risk sharing system is preferred.

In the case of market conditions, information is considered regarding the labor market and the health market. As stated earlier, risk information is directly associated with information costs. Asymmetric information is subject to a high cost of acquisition. In this case, it gives rise to moral hazard. Moral hazard refers to individual incentives to overuse health services because there are others that partly bear these costs. To avoid this problem, the system should have lower degrees of risk sharing coupled with appropriate level of compulsion.

With inelastic labor supply, decisions are less sensitive to income change, and hence it is less distortive to have a high degree of risk sharing or in fact to participate at all in a health insurance plan. On the other hand, with a more sensitive income group, the system should have less risk sharing to meet with the restricted capability of contribution of individuals.

Last, an efficient political process allows for a higher degree of risk sharing, especially for a public scheme. Altruism helps to facilitate a greater degree of risk sharing.

[12] Loss of human capital means inability to supply labor; for example deteriorated health or disability.

Generosity of safety net benefits

This section focuses mainly on the generosity of the safety net benefits. The initial idea is based on a multi-pillar social security system that consists of a public pillar, a private pillar and a safety net pillar[13]. In this respect, the safety net pillar refers to a public pay-as-you-go financing plan that provides a guaranteed minimum level of elderly care for individuals who are unable to save for themselves. It provides more equal accessibility to the elderly care.

The generosity of the safety net benefits depends on different perspectives. There are certain distinctions of which benefits shall be included and which groups of individuals are eligible. As an example after a long-term care financing debate in Britain, the universal care financing system seems to be the option. Even though the system does not seem appealing from a political perspective (because of higher costs and higher tax payments), it might be a better option considering market failures and solidarity factors. Hence, everyone has to pay more into the universal system otherwise the benefits will have to be distributed from the poorest groups to wider populations (Forder and Fernandez, 2011). In this respect, if the means-tested benefits have a higher eligible threshold, it would imply for lower benefits otherwise it needs a higher rate of contribution to secure the same level of benefits. If the benefits have more strict eligible criteria, it would allow for a higher level of benefits and a lower rate of contributions.

The first part of the table summarizes economic advantages of generosity within the safety net plan. The second part considers the degree of generosity in relation to the individuals' status. In other words, it shows the criteria of who is eligible for the means-tested safety net benefits. The third part summarizes the conditions under which means-tested benefits are more applicable.

	Wide eligible criteria, less generous benefits	**Narrow eligible criteria, more generous benefits**
Trade-offs	Preventing market failures of under insuring	Facilitating solidarity
Regarding		Age status Health Status Wage income Wealth (Pension, House, Saving)
Conditions		
Social/ Individual		
Risk aversion	high	low
Saving behavior	elastic and low	inelastic and high
Market		
Insured information	asymmetric and unverifiable	symmetric and verifiable
Information cost	high	low
Political		
Political process	inefficient	efficient
Altruism	weak	strong

Table 3.3 Trade-offs for size and design of safety net

[13] This thesis combines the terms public financing system and safety net financing system into safety net financing system.

Preventing market failures of under insuring v Facilitating solidarity

Individuals are not forward looking enough to save for their elderly care costs. Besides, the elderly care costs of each individual are uncertain and unpredictable. A wider coverage with a lower benefit provides at least some support for everyone to face with elderly care cost. It prevents under insurance problems from non-forward looking behavior that mostly associates with elderly care.

Nevertheless, it is also possible to have a higher benefit level for a wider coverage. Still, there is a price to pay. The more generous benefits can discourage incentives to supply labor since it would require more contributions. A high tax rate resulting from generous benefits will discourage incentives to supply labor for some specific income groups, especially among high-income groups.

On the other hand, a narrow coverage with a high benefit helps facilitating solidarity between different age, health, income and wealth groups depending on the design of the system. There is a higher degree of income redistribution since everyone has to contribute into the system, but only those who are eligible receive the benefits. Nevertheless, a large benefit would create a welfare dependent individual. In the worst case, it creates a disincentive to supply labor for a low-income group or so-called poverty trap[14]. However, the prevalence of a poverty trap might not occur under the health system since the benefits cannot directly substitute for income.

Similar to other economic trade-offs issues, the conditions that direct the system towards a lower or higher degree of generosity of safety net benefits are categorized into three parts.

(1) Risk preferences affect the generosity of safety benefits. High-risk aversion individuals would prefer to have a large social welfare system guaranteed by their government. Inelastic and high saving conditions means that individuals are constantly and continuously saving. There is no need for a universal support since individuals can save for their own care costs. Therefore, a funded system could become larger in financing elderly care expenditures while the pay-as-you-go part could become smaller.

(2) Market conditions consider asymmetric and unverifiable risks and high costs of measuring and quantifying them. Individuals' information for the government is imperfect; therefore, it is difficult to have means-tested benefits. As a result, a wider coverage is most preferable.

(3) It is more convenient for a country with an inefficient political process to have a wider coverage. A large numbers of individuals receive similar benefits without going through the test of eligibility, which requires less legislative and administrative work. In contrast, altruism facilitates the system towards having a higher degree of redistribution. The redistribution is embedded more in the means-

[14] Poverty trap refers to a situation that individuals rely only on such welfare system, and unable to escape from the poverty.

tested benefits because contributions are paid from everyone through tax, but it goes only to the poor people.

Intergenerational risk sharing

Macro risks cannot be pooled. In case of a downturn the cost or deficit can be transferred from the current generation to future generations. But as commonly known, a capital-funding system has no direct risk sharing between generations. Indirectly there can still be some kind of risk sharing between generations. For example if the funds are managed by a collective fund such as the Dutch pension system, there is still a degree of risk sharing. The risks to be considered in this case are aggregate health care costs risks, aggregate longevity risks, aggregate income risks and aggregate financial market risks.

In the pay-as-you-go system, there is more risk sharing between generations. Therefore the implementation of a capital funded system for elderly care changes the intergenerational risk sharing of elderly care. Attention has to be paid to the economic trade-offs of protecting the current generations against risks versus protecting incentives of future generations to participate in the intergenerational risk-sharing plan.

In the next chapter, the thesis will combine the knowledge from chapter 2 and chapter 3 for the countries analysis. It will discuss the characteristics of each system by arranging information based on the matrix dimensions and economic trade-offs. This will lead to the final step of this thesis, which is finding the most appropriate characteristics of a capital funding system for elderly care in the Netherlands.

Chapter 4: International experiences

Based on typology matrices in chapter 2 and economic trade-offs in chapter 3, this chapter presents international experiences of capital funding for elderly care and health care. It discusses how a capital funding takes part in financing system. For example, it could be a main financing system; otherwise, it exists for a certain type of care such as elderly care. The discussion incorporates information from typology matrices and economic trade-offs.

Constructed from relevant and availability of information, the economic trade-offs analysis will apply only for Singapore, India, Hong Kong and Australia since these countries have saving systems designed specifically for elderly care. The rest of the countries, which are China, the United States, South Africa and Canada, will not be discussed in detail. Though the systems have characteristics of saving for health care, it is irrelevant to the elderly care. However, for the completeness, there will still be some information from these countries provided.

Singapore

Singapore has a diverse population with various cultural and linguistic backgrounds. The country is made up of different ethnic groups including Chinese, Malays and Indians (Singapore department of statistics, 2012).

Meritocracy is an ideal principle in Singaporean society (Tan, 2008), meaning that in theory all citizens have the opportunity to be rewarded based on their abilities and accomplishments regardless of their ethnicity or background (The American Heritage, 2005). However, strong families are still the foundations of Singaporean society (National Population and Talent Division, Government of Singapore, 2012).

Governed under democratic system, Singapore is one of the least corrupted countries in the world (World Justice Project's Rule of Law Index, 2011). However, the country scored very low in terms of freedom. The country received 4 out of 7 for both political freedom and civil liberties, which is considered as partly free[15].

Singapore is considered to be as one of the most advanced economies. It ranked second on the world's Economic Freedom Index 2011, behind Hong Kong (The heritage foundation, 2012). In addition, it is the world's fourth leading financial center (Janus corporate solution, 2010). Its unemployment rate is one of the lowest among developed countries. Therefore, the poverty rate in Singapore is very low.

[15] Freedom in the world report 2012 by Freedom House Organization indicates that 1.0-2.5 means free, 3.0-5.0 means partly free and 5.5-7.0 means not free.

Like other developed countries, Singapore's population is rapidly aging. In 2012, the old age dependency ratio for Singapore is 12.2(Singapore department of statistics, 2012). Life expectancy is 81.47 years for males and 86.2 years for females (The World Fact Book of CIA, 2012). The Singaporean government predicts an average of 2.1 working-age citizens for each citizen aged 65 and above by 2030 while the current ratio is 6.3 (National Population and Talent Division, Government of Singapore, 2012).

With regards to its health system, the World Health Organization ranks Singapore's as the sixth in the world in its World Health Report 2010. The system is efficient in both financing and health outcome when compared to developed countries (Watson Wyatt, 2004). Under the principle that no medical service is provided free of charge, private sector dominates primary care. However, the government still provides direct subsidy to public hospital, polyclinics and elderly home care as a support for low-income individuals (Taylor, 2003).

Focusing on elderly care, children customarily take care of their parents, as strong family relationships root deeply the Singaporean society. If a given family cannot completely care for their older members, external assistance such as institutional care will be provided.

The overall health system in Singapore is mainly financed from one of three mandatory saving accounts called Medical Saving Accounts. By law, every Singaporean who has an income higher than 234 euro per month is obligated to save 40% of their income into the three mandatory saving accounts, namely the Ordinary Accounts for normal consumption and investment[16], the Special Accounts for retirement and the Medical Saving Accounts for health care. The contributions are shared equally between employers and employees. The management and design of the system are centered from the Central Board of Provident Fund (CPF), a Singaporean government agency.

The Medical Saving Accounts consist of four components, which are the individual saving account, catastrophic insurance, elderly care insurance and a safety net fund for unfortunate individuals. The main aim of the system is to reduce health care over utilization by inducing patients cost sharing (Hanvoravongchai, 2002). It encourages competition among service providers, which leads to market efficiency. The other aim of the Singaporean government is encouraging their citizens to save for their future elderly care costs (CPF, 2012). In addition, this system also relieves the burden of the Singaporean government as well as future generations.

Degree of compulsion

Taking into account both the country's background and its prudent and risk averse population, the compulsory system is desirable from both political and individuals' perspectives. However, the

[16] The ordinary account is a mandatory saving account for a regular consumption. Singaporeans are allowed to withdraw this fund for any purpose. The account is mostly encouraged to use for investment and buying a house.

country still allows for an appropriate level of freedom. This significantly reflects in the health-financing system.

As stated earlier, there are four components to financing health care expenditures in Singapore. The first and foremost component is the individual saving accounts called Medisave. It is a purely mandatory individual saving account for selected medical expenditures, which is considered as a purely funded defined contribution. The system is compulsory for every employed citizen from the start of the professional career up until 55 years old. The contribution rate is, as well, compulsory based on income and age. The accumulated contribution is saved into a government-managed fund which receives interest payments as well as tax benefits.

Nevertheless, the Singaporean system is not entirely compulsory. The government tries to maintain a balance between compulsory and voluntary characteristics.

From the Medisave account, individuals are free to choose any health providers within the government or private health-care delivery system (Li, 2007). The system also allows for withdrawal of funds for the medical expenditures of their family members. However, the accumulated funds from Medisave can pay for only selected medical expenditures according to the criteria of the Central Board of Provident Fund (Massaro, 1996). These criteria aim at avoiding an exhausted saving account and moral hazard in health care overutilization. Other than that, the funds from the Medisave account can pay for insurance premiums including Medishield, Medishield Plus and Eldershield. (1) Medishield is a voluntary catastrophic insurance covering inpatients and outpatients expenditures. It gives a reimbursement at only public provider rate. (2) Medishield Plus is an extended version of Medishield. It provides higher reimbursement that also covers service from private providers. (3) The Eldershield is voluntary elderly care insurance. It provides basic financial protection to those who need long-term care. Individuals can immediately claim the benefits after the premium is paid (Hanvoravongchai, 2002). The enrollment in these insurances is voluntary as the government allows individuals to choose at which level they wish to be insured.

To sum up, compulsory participation mostly applies to accumulation phase, for instance; saving account participation, rate of saving and period of saving. Meanwhile a degree of voluntariness applies to the decumulation phase, namely insurance participation, type of services and service providers. Nevertheless, the degree of freedom has its limits; there are specific criteria surrounding the types of services covered by Medisave.

With these practices, considering economic trade-offs from such system, the Singaporean government is able to:

(1) Prevent moral hazard in service overutilization while accommodate heterogeneity because of mandatory Medisave and voluntary insurance participation decision. Still they cannot prevent adverse

selection since the decision to participate in insurance plans is voluntary. Healthy individuals are less likely to participate in the risk pooling insurance plans while unhealthy individuals have more tendencies to participate. Though the problem of health services overutilization is solved through mandatory Medisave, voluntary insurance participation decision actually gives rise to selection problem.

(2) Prevent individual failure, but still allow for freedom of choices. By having participation and saving rate compulsory, the government protects individuals from their failure, namely inability to assess uncertainties in their future health outcome. On the other hand, individuals are still free to choose whether they would like to have insurance, and they can choose the health service providers. Though the insurance participation is voluntary, the number of plan participants is impressive. In 2006, more than 86% of member in the Medisave join the Eldershield insurance (Borda, 2011).

(3) Exploit the economy of scale from the return on investment, while encourage competition. By having a large pool of fund, the system can achieve the economy of scale from the return on investment. Simultaneously, by allowing for free choices of choosing health service providers, it also encourages more competition among service providers. This results in efficiency as well as lowering the cost of the services.

Intergenerational risk sharing

Intergenerational risk sharing is not suitable for Singapore because of the aging problem and meritocracy principle. Firstly, there are fewer contributors relative to receivers in an aging society. Secondly, meritocracy means that people's achievement is based on their efforts. It refers to a competitive and individualized society, which is the case in Singapore. Therefore, it does not seem to fit the culture in Singapore to have intergenerational risk sharing. However, strong family relationship is a trait of Singaporean culture and caring for the elderly is a legal obligation. Additionally, the government states that individuals must earn and save enough throughout their life. If not, they will have to depend on their children; otherwise the government will step in at later stage (The Economist, 2010).

Therefore, each generation has to borne aggregate risks for themselves since there is almost no degree of intergenerational risk sharing within the Medical Saving Accounts system. Still, such system increases incentives of future generations to participate in the plan and to supply labor because of the lowering of tax collection for financing the older generations' expenditures.

Intra generational risk sharing

There are voluntary risks sharing components within the medical saving accounts system. A certain type of insurance plan covers different risks such as health, financial and longevity risks while a safety

net covers income risk. Individuals are free to choose whether they would like to participate. The insurer of the plans is the Singaporean government.

The health and financial risks are shared through the catastrophic health insurances called Medishield and Medishield Plus. Once individuals contribute to Medisave, they can apply for Medishield and Medishield Plus. The participation period of catastrophic insurance schemes is from 24 up to 75 years old, and the premium is based on the age of the subscriber (Massaro, 1996).

The health, financial and longevity risks are shared through an elderly care insurance called Eldershield. It is a voluntary long-term care insurance plan, which automatically covers the Medisave members who are 40 years old. Individuals can claim the benefits once they need it (e.g. become disabled) at any age after the premium is paid. It is in the form of a monthly cash payout to assist the out-of-pocket payment for long-term care expenditures. The benefit is 400 Singapore dollars per month with a maximum payout period of 72 month (CPF, 2012).

Apart from health risk sharing through insurance plans, there is income risk sharing through means-tested safety nets. The government finances the means-tested safety net through general taxation. Only eligible individuals with an income less than 234 euro per month can receive subsidies, and they can only use health services provided from certain service provider called Voluntary Welfare Organization (VWO).

Generosity of safety net benefits

As a result from a well-developed economy and meritocracy principle, the Singaporean government hardly provides a generous welfare system. In addition, receiving state subsidies can be frowned upon in the Singapore. Though, the family plays a large role in helping their family members in need, there is still some means-tested subsidies for low-income individuals.

Known as Medifund, the fund guarantees minimum health provision for low-income or unfortunate individuals. On top of that, there is the Eldercare fund for low-income elderly. Both funds are financed from government budget surplus. The benefits from these funds are means testing (Ministry of health, 2003). Individuals have to apply, and be approved by the Hospital Medifund Committee. The members under Medifund and Eldercare fund can only use services and facilities offered by Voluntary Welfare Organization (VWO).

The means-tested subsidies are different depending on employment status. Employed individuals receive subsidy based on their average monthly income. Unemployed individuals receive subsidy based on the value of their houses. Additionally, unemployed residents in public housing for low-income individuals receive full health subsidies.

The low degree of generosity of benefits, namely means-tested subsidies results in low level of solidarity in the country. On the other hand, it enhances incentives to supply labor for high-income group since the tax rate is lower for means-tested benefits relative to universal benefits. Nevertheless, means-tested benefits may negatively affect low-income group, as it can create a poverty trap. Instead of helping low-income individuals, it might discourage incentives to supply labor. They may decide to stop working, and depend fully on the state subsidies.

To conclude, Singapore capital funding for health care system has a well balance between the degree of compulsion and voluntariness. It covers almost all economic trade-offs. Compulsory contribution mostly applies to the accumulation phase while voluntary contribution applies to the decumulation phase. Risk sharing between generations is concentrated only at the family level. There are voluntary health risk sharing through catastrophic insurances and elder care insurance. Individual can voluntarily choose to insure themselves against future health outcome according to their preferences. Last, because of Singapore social values, there is very small part of social welfare system for low-income individuals.

India

India is a democracy and one of the most populous countries in the world. The country received 2 out of 7 points for political freedom and 3 out of 7 for civil liberties[17]. Following economic reform during the 1990s, India has experienced high economics growth. However, it continues to face the challenges of inequality, corruption and health care.

There is a strict social hierarchy rooted in traditional Indian society. The Indian caste system separates people into different level. This leads to inequalities and discrimination towards the lowest caste. However, family values are important, and a big family living together is very common in India.

Similar to other developing countries, India elderly population has greatly increased. Life expectancy is 66.08 years for males and 68.33 years for females (The World Fact Book of CIA, 2012). Its old age dependency ratio was 8 in 2011 (The World Bank, 2012).

Health care system in India is a universal health care run by the government. However, the system features an overly bureaucratic legal and regulatory framework that fails to protect vulnerable groups or generate the trust of providers (Maniyattu, 2012).

Focusing on elderly care in India, its cultural view of elderly care is based on strong family relationship. Children have an obligation to take care of their parents when they become old. Under its

[17] Freedom in the world report 2012 by Freedom House Organization indicates that 1.0-2.5 means free, 3.0-5.0 means partly free and 5.5-7.0 means not free.

11th 5 Year plan 2007, the Indian Constitution states that elderly citizens will be guaranteed Social Security support for health care and welfare. It also mandates that children have to support their parents if they no longer can help themselves (National Policy for Senior Citizens, 2011).

Focusing on capital funding for elderly care system in India, two systems called Community-based Medisave and insurance for elderly care called Bhavishya-Arogya have to be taken into account. The Community-based Medisave aims at increasing health coverage for individuals in rural areas while Bhavishya-Arogya aims specifically at financing elderly care. Due to its relevance, this thesis will only focus on the Bhavishya-Arogya example concerning to the economic trade-offs. However, Community-based Medisave will be described as well.

Community-based Medisave

Community-based Medisave is an experimental project operated from 2005 to 2007, aiming at protecting people from the financial risks of obtaining health care (Durairaj et al., 2009: Page 2). The system has multiple components including individual saving accounts, catastrophic insurances and safety net fund.

600 volunteers from Karnataka province participated in this experiment are women. The contribution is a onetime premium payment into an individual saving accounts, and each contribution is always matched by the equal sum not more than 1.62 euro per month.

The transaction system is simple. Patients are not involved in any cash transaction as long as the balance in the saving accounts exceeds the cost of treatment. Additionally, the fund can be transmitted to nominees.

Bhavishya-Arogya

Using the concept of Medical Saving Accounts, Bhavishya-Arogya is an insurance for health care after retirement. The plan has existed in India for many years already (Nagpal et al., 2008). It aims at financing medical need during old age while one can still save or pay the premium during working age.

Any private insurance company can offer this insurance plan. The participation into this plan is voluntary. Individuals are encouraged to join the plan when they reach 25 years old, and pay the premium up until 55 years old. The rate of contribution is not fixed. Individuals can choose the amount of premium payment according to their preferences. Additionally, participating in the plan is tax deductible.

Benefits will pay out only after reaching retirement age, which is 55 years old. The benefits are set according to the premium contributions. They are in the form of reimbursements for surgical and medical expenditures during hospitalization or institutional care starting from age of retirement and continue up to death. The fund lying in the account can be transferred to the nominee as calculated according to the term of policy.

Degree of compulsion

Considering the system design for Bhavishya-Arogya, the plan has very high degree of freedom. This is in line with the countries characteristics. First, the political structure values freedom highly as it scores very high from international rankings. Second, children have an obligation to take care of their parents; therefore it is sometimes unnecessary for particular individuals to have such plan. As results, the plan enjoys high freedom of choices, and it can accommodate individuals' preference.

Simultaneously, there are also criteria of the benefits limiting to only hospitalization or institutional care. This would prevent individual failure and overutilization problem.

Intergenerational risk sharing and intra generational risk sharing

There is no intergenerational risk sharing under this plan. The insurance plan is a purely individual saving account for elderly care. The level of benefit is proportional to the amount of contributions. There is no payment from one generation to another generation. In addition, there is no intra generational risk sharing at any level. In these respects, individuals and well as the whole generations cannot protect themselves against risks. They have to bear the risks by themselves. There is no solidarity from this system contributing to the country. However, the system can prevent moral hazard, and does not distort incentives to save and supply labor.

Hong Kong

Hong Kong is a special administrative region (SAR) of the Republic of China. Under the principle of 'one country, two systems', it has a different political system with a high degree of freedom. The country obtains good international raking in various aspects, for example; economic freedom, financial and economic competitiveness, quality of life, corruption perception and human development. It has a major capitalist service economy characterized by low taxation and free trade. The country ranks as the freest economy in the world by the Index of Economic Freedom (World Economic Forum, 2011-2012).

Due to its early health education, professional health services, and well-developed health care and medication system, Hong Kong is one of the healthiest places in the world (Kowloon Hospital, 2012).

There are strong public health systems. Additionally, some of the private hospitals are considered to be among the very best hospital in the world.

According to both the UN and WHO's estimation in 2012, Hong Kong has the longest life expectancy of any country in the world. It is 79.09 years for males and 85.05 years for females (The World Fact Book of CIA, 2012). The old age dependency ratio was 17 in 2011(The World Bank, 2012).

Faced with aging problem, the health expenditures are increasing rapidly. Hong Kong is in search of an alternative system. One of many proposals is a capital funding system for health care focusing on old age long-term care (Neufeld, 2001 and Food and health bureau, 2004).

Proposed in 2000 by researchers from Harvard University, the Health Protection Accounts (HPAs) is called capital funding system for elderly care. It is a proposal under the Lifelong Investment in Health Program. The main aim was to organize the financing system for medical service after retirement. Additionally, the plan aims at narrowing the price gap between private and public providers (Neufeld, 2001). The Health and Welfare Bureau (2001) as well as Food and Health Bureau (2008) also state that HPAs will promote self-responsibility without shifting any financial burden to the next generations.

The system consists of two parts, the individual saving accounts called Medisage and an insurance plan for long-term care after retirement[18]. The mandatory Medisage is proposed to individuals aged 40 to 64 years old, and the mandatory long-term care insurance for 65 years old and up. The contribution should be approximately 1-2% of total income.

From the individual saving account or Medisage, the fund can be used for long-term care insurance and selected health related expenditures, but mainly for long-term care insurance after retirement. Furthermore, the saving in this account is allowed for dental care, which is not included in general health insurance plan. Yet, individuals can withdraw the accumulated fund in Medisage for other purposes rather than health when they reach 65 years old. Additionally, the unspent money in the individual saving account could be transferred to family members.

The second part of the Health Protection Accounts (HPAs) system is long-term care insurance. The long-term care insurance will cover nursing home, visiting nurse services, and home aid visits. The premium of this insurance should be financed from the Medisage. The benefits from this insurance will be in the form of reimbursement at the public sector rate (Bauhinia Foundation Research Centre, 2007). In addition, the proposal also suggests that the government should provide full subsidies on long-term care insurance premium for poor and unemployed individuals (Yu, 2005).

[18] Health and welfare bureau (2001) and Yu (2005)

This proposal was rejected. The Hong Kong Food and Health Bureau (2012) stated that the political situation in Hong Kong made it impossible to implement mandatory individual savings system for health care. The public consultations indicate that the publics are not in favor of mandatory schemes. As a result, in 2011, the Food and Health Bureau introduced new health protection systems: a government-regulated voluntary private health insurance system and a government health care fund for public hospitals. They seem to be more effective ways in dealing with aging population (Yuan, 2011-2012).

Degree of compulsion

Considering the system design, though the country received 5 out of 7 for political freedom and 2 out of 7 for civil liberties, which is considered as partly free[19], the proposal is in favor of compulsory contribution. With regards to participation, rate of saving and services criteria, the proposal proposed for the high degree of compulsory. However, there is room for flexibility such as flexibility in service criteria or service providers. In this case, the system provides less freedom, and does not accommodate heterogeneity. However, it achieves more sustainability because the system prevents adverse selection and individual failures. It also increases incentives to save and exploit economy of scale from the return on investment within collective fund.

Intergenerational risk sharing and Intra generational risk sharing

Similar to the implemented system in India, the system contains no intergenerational risk sharing. Working age individuals have to save and pay the premium and receive the benefits only after retirement. There is no payment from one generation to another generation. On the other hand, the system contains some degrees of intra generational risks sharing from the elderly care insurance part. In this respect, there is no solidarity between generations, but only within the generation.

Generosity of safety net benefits

Within the proposal, the safety net fund is briefly mentioned. It is in the form of means-tested benefits. It is proposed that the government should provide full subsidies on insurance premium for poor and unemployed individuals. With this practice, the system could protect low-income individuals and sustain level of solidarity.

[19] Freedom in the world report 2012 by Freedom House Organization indicates that 1.0-2.5 means free, 3.0-5.0 means partly free and 5.5-7.0 means not free.

Australia

As a developed country, Australia ranks well in many international performance comparisons, such as quality of life, health, education, economic freedom, and the protection of civil liberties and political rights (Wiki, 2012). Its economy is the world's thirteenth largest in the world. It is a wealthy country with a low rate of poverty. In 2011, the country was ranked second in the United Nations Human Development Index.

Like many other developed countries, Australia is experiencing a demographic shift towards an older population, with more retirees and fewer working citizens. Australia has the fourth highest life expectancy in the world after Iceland, Japan and Hong Kong (Australia Institute of Health and Welfare, 2007). Life expectancy in Australia is 79.48 years for males and 84.45 years for females (The World Fact Book of CIA, 2012). The old age dependency ratio was 20 in 2011 (The World Bank, 2012)

Health care in Australia is provided from both private and government institutions. The current health financing system is known as Medicare. It is a publicly funded universal health care system. For elderly care, patients in Australia receive reimbursements and assistances from the Australian government, which range from lower level of care to intensive care (Common Wealth of Australia, 2000).

Since Australia elderly care is subjected to high cost, there are various proposals for the system reform. The two proposals worth discussing related to capital funding for health care are Health Saving Accounts (HSAs) and Aged Care Home Services: Government-backed Australian Aged Care Home Credit scheme

Proposal for Health Saving Accounts (HSAs)

With an aging population and a shrinking pool of employed citizen, it is difficult to fund the need of the elderly (AMA, 2004). Individuals have to finance some parts by themselves. The proposal for capital funding for elderly care is called Health Saving Accounts (HSAs). Other than solving the aging problem of elderly care, this system will reflect the cost of health care. Moreover, the saving will also earn a return on investment that will attract more investment capital (Productivity commission, 2011).

This proposal gives high weight on the freedom of choices. There will be no limitation on who can provide the health saving accounts. The most convenient approach is to introduce one stop shop for superannuation[20] and health saving accounts. The participation should rather be voluntary. The contribution into this account should come from pretax income, and subjected to similar tax benefit

rate as superannuation, which is 15% tax exempt. In addition, individuals could also choose the form of benefits payment.

In fact, the system is quite similar to superannuation[20]. In contrast to age based contribution of a superannuation system, the proposed contribution for Health Saving Accounts is health based. However, it was also proposed that there should be a minimum requirement for the balance in the account as well as the upper limit of the contribution. The minimum required balance could be at 25% of the regular cost of care. The minimum required balance could be set at 25% of the regular cost of care. Aside from this, co-contribution from the government should be provided to assist the low-income group. Also, it has to cover specific "in need" groups such as rural community or high-risk individuals.

Before this proposal, a compulsory aged care savings accounts plan was proposed but rejected due to the fact that it would have reduced the choice of savings goals, and would have been too late to effectively fund the old age care costs of the baby boomers generations (Productivity commission, 2011).

Degree of compulsion

The proposal gives more weight on freedom of choices; therefore the system tends to have higher degrees of voluntary characteristics relatives to compulsory characteristics. However, in order to keep the stability of the system, and to protect individuals from their failures, the proposal states that there should be some criteria such as the amount requirement or service criteria.

Intergenerational risk sharing

With regards to intergenerational risk sharing, there is no degree of such risk sharing since individuals have to contribute into the account by themselves, and receive the benefits at a later stage in life based on the contributions. Such system will not distort incentives to supply labor and to participate in the system for other generations. However, the current generations cannot protect themselves against macro risks.

Intra generational risk sharing and generosity of safety net benefits

The proposal does not mention intra generational health risk sharing through pool of fund or insurance. However, there is some information about subsidies for unfortunate individuals. It is a safety net

[20] Superannuation in Australia is an arrangement to have funds available for individuals during retirement. The Australian government encourages and supports the plan. The government mandates a minimum contribution from employees, other than the main contribution from employers. Individuals can withdraw the benefits from this account when they meet a certain condition such as retirement, terminal medical condition, permanent disability or severe financial hardship (APRA, 2007).

arrangement for low-income and unhealthy group, which could take the form of co-payment and subsidies from the government. In this case, unfortunate individuals will be insured against health and income risks without distorting incentives to save and supply labor of others, namely within the generation and other generations. In addition, such system will also prevent moral hazard of service overutilization.

Proposal for Aged Care Home Services: Government-backed Australian Aged Care Home Credit scheme

The Government-backed Australian Aged Care Home Credit scheme under Aged Care Home Service system in Australia is a reverse mortgage plan for elderly care offered to individuals older than 60 years old (National Affairs, 2012). The rationale behind is that old Australians have a higher capacity in financing their elderly care cost through their home equity (Productivity commission, 2011). Therefore, the main purpose of the system is to design a comprehensive but fair co-contribution system to assist the elderly in accessing the equity in their residence and contributing to their care costs (Productivity commission, 2011). Yet, the system has to protect individuals from catastrophic costs of care and from having to sell their home (Productivity commission, 2011).

Under this system, there will be a Government-backed Australian Aged Care Home Credit Scheme serving as intermediary for individuals to sell their home for accommodation bond. The agency called the Australian Seniors Gateway Agency would evaluate a value of home equity and specify a minimum level of equity or bond. Then, individual can draw on the line of credit to fund their elderly care cost. If the balance reached the minimum limit, there would be no further draw. If there were an outstanding of balance of the line of credit, it would be repayable to a partner, dependent child or a caregiver.

However, the proposal was rejected, and two other broad options have been analyzed and proposed. The first one is the compulsory government owned insurance scheme, and the second one is continuation of pay-as-you-go funding from annual government budgets with an increase in tax collection, specifically for the health financing system (Productivity commission, 2011).

Considering the system design, there is not enough information to conduct a comprehensive system analysis. The literature available does not have information about the degree of compulsion. With regards to risk sharing, the system does not have intergenerational risk sharing, but intra generational risk sharing. The major risk to be shared is health risk. The system functions similarly to the pool of insurance, but uses home equity as a mean of contribution. Lastly, there is no information about the generosity of benefits for the patient, but the proposal states that there will be subsidies for service providers.

China

China is the most populated country in the world. Governed by the Communist Party of China, the country obtained very low freedom scores from the Freedom House Organization Survey in 2012. The country received 7 out of 7 for political freedom and 6 out of 7 civil liberties.

Due to its one child policy introduced in 1978 to solve social, economic, and environmental problems, China is subject to a severe aging problem. As a consequence of the one child policy being enforced, a child was effectively left to support two parents and four grandparents (Jackson et al., 2008). This resulted in older generations with greater chances to depending on personal saving or social welfare program such as retirement funds. Currently, life expectancy in China is 72.82 years for males and 77.11 years for females (The World Fact Book of CIA, 2012). Old age dependency ratio is 13 in 2010 (United Nations World Population Prospects, 2010).

However, there have been some benefits from this policy. The individual savings rate has increased because of two reasons. First, the average Chinese household spends less time and money on their children, which leaves more rooms for saving and investment. Second, since they cannot rely on their children any longer, there are more incentives to save for their future expenditures.

With regards to the Chinese health system, the Ministry of Health of the People's Republic of China governs the health needs of the Chinese population. After the 1978 economic reforms, the health of the Chinese public improved rapidly. Healthcare in China became privatised, and experienced a significant rise in quality.

The current health-care financing system is made up of two types of capital funding for health care, which are the Medical Saving Accounts (MSAs) for urban populations and the New Cooperative Medical Scheme (NCMS) for rural populations. The Medical Saving Accounts (MSAs) for urban populations aims at reducing the moral hazard of health care overutilization. While, the New Cooperative Medical Scheme (NCMS) for rural populations aims at increasing health coverage for low-income individuals in rural area. The two systems serve for different purposes and have different characteristics.

Medical saving accounts (MSAs) for urban populations

Following ambiguous success in Singapore, China is the second country to apply the Medical Saving Accounts (MSAs) as its major health financing system (Fan et al., 2010 and Borda, 2011). The system was firstly introduced in 1994 as a pilot project in Zhenjiang and Jiujiang provinces. The initial purpose of setting it up was to ensure accessibility to health services for employees of bankrupted

enterprises (Borda, 2011). Presently, it aims at reducing health care over-consumption and improving efficiency of health care services.

The mandatory medical saving accounts system is composed of three components: individual saving account, out-of-pocket deductible and social insurance.

The individual saving account is the first component in which the fund can be withdrawn as soon as health expenditures occur. After their individual account is exhausted, patients must pay up to 5% of annual wage out-of-pocket in the form of deductible. The out-of-pocket acts as the second layer to finance medical expenditures above individual saving accounts. The medical expenditures above the fund accumulated in individual accounts and the out-of-pocket deductible are considered as catastrophic expenditures. These expenditures will be paid from the last component called social risk pooling insurance.

The system is mandated for employees and retirees, but excludes from informal and migrant workers. Each city in China can decide on its own for the management of balance in the fund (Hanvoravongchai, 2002). The contributions are pooled from employers and employees at mandatory rate of 11% of total wage. Employees have to contribute 1%, and employers have to contribute 10%. Then, the 5% of total contributions always goes to social risk pooling insurance, and the rest is for individual saving accounts. The sum of capital for individual accounts depends on age. In 2002, those younger than 44 years old received 4%, and 3% for those younger than 35 years old (Fan et al., 2010). The fund is deposited in the Industrial and Commercial Bank of China, and receives a 4% interest rate.

There are criteria for the services that the fund from individual saving accounts can cover. Physician fee and service costs are fixed for both outpatient and inpatient. However, the costs can sometimes be higher than the fixed rate. In this respect, social risk pooling insurance will reimburse only half of the excess, and the other half will be paid by the hospital. In addition, the fund cannot be withdrawn for non-medical services, but it can be inherited as bequests.

Degree of compulsion

Considering the system design, the system is mostly compulsory. This is in line with the overall low degree of freedom in the country. The main aim of such implementation is to prevent individual failures. The indirect benefits from this system are to increase incentives to save and to exploit economy of scale from the return on investment. These will lead to stability of the system.

Intergenerational risk sharing and intra generational risk sharing

The degree of intergenerational risk sharing (e.g. retirement fund) is very low since a strong social family tie is rooted in Chinese social value. Children are obliged to take good care of their parents.

Therefore, the MSAs system in China does not contain intergenerational risk sharing. On the other hand, the intra generational risk sharing under the MSAs system is only a small part. Individuals have to first finance their health expenditures by themselves through individual saving accounts and the 5% of annual wage out-of-pocket payment. After that, the social risk pooling insurance will give the reimbursement benefits. This is the only risk sharing part within the MSAs system. Individuals can protect themselves against health risk and financial risk without distorting incentives to save and supply labor of the other generations. Additionally, such implementation also prevents moral hazard of health service overutilization.

Generosity of safety net benefits

Similarly to Singapore, India and Hong Kong, family value is very important in the Chinese society. Children are expected to take care of their parents at old age. Therefore, it is unnecessary to have broaden and generous safety net benefits. In addition, receiving social welfare benefits is considered disgraceful and embarrassing in the Chinese culture. Still, there is low level of means-tested subsidies for unfortunate individuals.

New cooperative medical scheme (NCMS) for rural populations

Alongside the medical saving accounts system for urban populations, there is the new cooperative medical scheme (NCMS) for rural populations. The system consists of catastrophic insurance scheme and individual saving accounts (Yip and Hsiao, 2007). The system was introduced in 2003. It aims at establishing social security network and improving equity of health care accessibility (Xu et al., 2009).

The NCMS is operated at the country level under the supervision of the Ministry of Health. The health bureau is responsible for its design, implementation, management and administration. The system covers 91.5% of the total population, which accounts for 830 million individuals. The system is voluntary in principle, and the farmers are most encouraged to join (Xu et al., 2009).

The contributions to the NCMS come from the central government, local governments, and individuals (Xu et al., 2009). It is set at a monthly lump sum rate. In 2008, the government is required to contribute 10.16 euro while household is mandated to contribute 2.54 euro into the system. Other than that, the government pays larger amount for poor households who are unable to contribute (Xu et al., 2009). One part of the fund are pooled into catastrophic insurance at the provincial level with no cross subsidization across provinces, and the other part is for the individual medical saving accounts.

The reimbursement rate from catastrophic insurance is set from 30% to 80% for inpatient services depending on the level of facilities. It is set lower for more expensive facilities (Xu et al., 2009). The benefit is defined by the available fund from the government.

Degree of compulsion

Considering the system design, the system has lower degree of compulsion than the Medical Saving Accounts (MSAs). Once individuals decide to participate in the system, the saving rate is compulsory. One of the reasons is to accommodate income heterogeneity among low-income class in rural area. The other aspects are protecting incentives to supply labor and facilitating freedom of choices.

Intergenerational risk sharing and intra generational risk sharing

Due to the lack of information, it is unclear if there is intergenerational risk sharing. This depends on the financing source for the government contributions. However, there is clearly intra generational risk sharing in this system. Health risk, financial risk and income risk are shared largely at the provincial level through catastrophic insurance. In this case, individual are protected against risk Additionally, decentralization makes the system more manageable taking into account the size of the country.

Generosity of safety net benefits

The level of generosity is higher for the new cooperative medical scheme (NCMS) for rural populations compared to the system for urban populations. This is due to the fact that individuals in the rural area have less opportunity to earn and save for themselves than individuals in urban area. In addition, because of the large subsidies from the government, the system can cover almost all individuals even though the plan participation is voluntary.

The United States

Due to its large geographical landscape and divers in population, there are a lot of different and contradictory within American culture. The country is well known as a capitalist economy with little labor protection and relatively widespread of inequality and poverty. The country received 1 out of 7 for both political freedom and civil liberties, which considered as very free[21].

Life expectancy in the United States is 76.05 years for males and 81.05 years for females (The World Fact Book of CIA, 2012). The old age dependency ratio was 20 in 2011. Its life expectancy is below most developed countries and some developing countries. There is a growing gap in life expectancy, especially between different income and educational level.

In the United States, various service providers provide health care. The government primarily insures public sector employees. However, most of services and facilities are operated by the private sector.

[21] Freedom in the world report 2012 by Freedom House Organization indicates that 1.0-2.5 means free, 3.0-5.0 means partly free and 5.5-7.0 means not free.

The United States is said to have poor health care system compared to other developed countries. In 2000, the World Health Organization ranked the United States health care system as the highest in cost. The Commonwealth Fund ranks the United States the last in the quality of health care among similar countries, and notes that the United States care costs the most.

Health public expenditures are very large among elderly citizens. According to the United States Department of Health and Human Services, the elderly populations are 39.6 million in 2009, which represented 12.9 percent of the U.S. population. By 2030, they predict that there will be approximately 72.1 million elderly citizens. This would mean more elderly care expenditures in the coming years.

In the United States health financing system, there is a part of capital funding system. The system is not design specifically for elderly care, but it is worth for the information and discussion.

Regarded as saving accounts for health care, the systems are voluntary offering by various private insurance companies. They are normally coupled with high deductible insurance scheme[22]. The systems are decentralized depending on rules of each state, and can be offered by various private insurance companies. The accounts can be set up, and the fund can be deposited and managed by bank, insurance company or other entity approved by internal revenue service (AHIP, 2005).

In the United States, individual accounts expose patients to greater cost sharing, and create cost containment by reducing health care expenditure. The patients also become more aware and selective in choosing health services, which results in an increasing competition among service providers. Therefore, it lowers the risk of moral hazard of insured individuals (Jung and Tran, 2011). Moreover, the health saving accounts system is also known as a tool for tax benefits.

There are four types of saving accounts for health in the United States, which are Medical saving accounts (MSAs), Health saving accounts (HSAs), Medical flexible saving accounts (FSAs) and Health reimbursement accounts (HRAs).

Medical saving accounts (MSAs)

MSAs must be offered with high deductible insurance. The coverage was only for self-employed and employers with less than 50 employees (Borda, 2011, Giri and Khandelwal, 2010 and Kofman, 2004). However, the scheme is already obsolete. After December 2005, there was no new MSAs issued, and the remaining MSAs were rolled over into health saving accounts (HSAs) (Cronin et al., 2007).

Health saving accounts (HSAs)

[22] The high deductible refers to uniform deductible across all benefits. It has to be 891 Euros for individual insurance plan, and 1,782 Euros for family plan (Jung and Tran, 2011).

Similar to MSAs, HSAs must couple with high deductible insurance (Giri and Khandelwal 2010). However, HSAs are not restrictive as MSAs, as they contain broader eligibility rules, larger tax benefits, lower deductible requirement and more types of health coverage (Kofman 2004). The system aims at covering medical expenditures below deductible. It intends to be used for high incidence, but low severity such as general visits (Cronin et al. 2007). It also induces individuals to save more for future health expenditure (Jung and Tran 2011), supports private insurance market (Borda 2011) and also lowers insurance premium (Jung and Tran 2011).

HSAs can be based on occupations or individuals as long as the plan members have a qualified high deductible insurance plan (Giri and Khandelwal 2010 and Kofman 2004). It can be in the form of individual plan or family plan (Borda, 2011). The participation is voluntary with an opting out option. The contribution can come from self-employed individuals, individuals without job-based insurance, employees, employers or both. The contributors can also save on behalf of their family members (Kofman 2004 and AHIP 2005). There is no specific rate of contribution. The limit of contribution are reviewed and adjusted annually according to the consumer inflation index. Members of the HSAs plan that are older than 55 years old can choose to save 810 euro more into the accounts (Kofman 2004 and Peavler, ?). The upper limit of saving is based on individual wages. In 2012, the individual limit was 2,511 euro, and the family limit 5062 euro (HSAcenter 2012). In addition, the contributions into these accounts are subject to tax exemption and interest return. The interest rate is flexible, and links to market performance.

The accounts can only cover selected preventive care (AHIP 2005). However, it can be used for health of spouses or dependents as well (AHIP 2005). Apart from medical payment, individuals are encouraged to use these accounts for retirement saving (Cronin et al. 2007). Withdrawal for non-medical expenditures is possible, but it is subjected to 10% income tax penalty (Jung and Tran 2011).

Flexible health saving accounts (FSAs)

FSAs intend to induce individuals to save more for future health expenditure (Jung and Tran, 2011). They are part of health care plan that has low or no deductibles, but high premium (Knapp, 2011 and Giri and Khandelwal, 2010). The plan covers only employees within specific employers (Giri and Khandelwal, 2010 and Kofman, 2004), and employers must offer it only (AHIP, 2005).

The employees pay a designated amount of contribution. The rate cannot be changed, but it is flexible under some circumstances such as change in family or employment status (AHIP, 2005). The contributions into these accounts are subject to tax exemption and interest payment. The interest rate is flexible, and links to market performance.

FSAs fund does not allow the roll over to the next year. The fund will be returned to employers within the year; therefore, employees have to use these saving accounts or they will lose them to their employers (Knapp, 2011 and AHIP, 2005). In addition, the employees cannot take the fund with them when they leave the company.

The saving accounts can pay for medical related expenditure directly. The fund can be accessed through FSAs debit card (Flexcard). The plan applies for selected preventive care and dependents care of children and elderly. For the elderly care, it cannot apply for some services such as nursing home (Wiki, 2011). The capped amount of withdrawal is 4050 euro, and the amount above is subject to income tax.

Health reimbursement accounts (HRAs)

HRAs are saving accounts set up and paid for by employers for their employees. The employers define benefits and service criteria. Basically, it is the company pool of fund (Giri and Khandelwal 2010). The employers can contribute with unfunded credit rather than actual cash amount into the HRAs (AHIP, 2005). Employees can claim the reimbursement from this account after medical visits. There is no maximum amount of contribution for HRAs. The fund in HRAs always remains with employers (Cronin et al. 2007, Kofman, 2004 and AHIP, 2005).

The main purpose of such health reimbursement accounts is not only financing health care of employee, but as well as receiving tax benefits.

South Africa

The World Bank 2012 ranks South Africa as an upper-middle income economy. It has a mixed economy with a high rate of poverty and low GDP per capita. The middle to high-income class accounts for only 20% of the total population, and approximately a quarter of the population is unemployed (Hopkins, 2010).

Life expectancy in South Africa is 50.34 years for males and 48.45 years for females (The World Fact Book of CIA, 2012). Old age dependency ratio is 8 in 2010 (United Nations World Population Prospects, 2010).

For health system, South Africa has both private and public institutions. Approximately 80% of the population is insured by the public system, and the rest is privately insured (Hopkins, 2010). Though the public system serves the vast majority of the population, the system is inefficient and underdeveloped. The middle to high-income class of the population who mostly uses the private system is far better served.

Considering capital funding for health care in South Africa, the system was implemented in 1994, and offered by private insurance providers. Known as Medical Saving Accounts (MSAs), the system consists of two components, which are insurance plan and individual saving accounts. The plan intends to help controlling individuals' medical expenditures that cover by insurance policy, but still being under deductible threshold. Therefore, it was recognized as a complementary to support private insurance market (Borda 2011).

There are very flexible rules for providing a Medical Saving Accounts (MSAs). Private insurance companies are free to decide, offer and manage the MSAs. The individual accounts can be a stand-alone saving plan; otherwise, it can be coupled with any type of health insurance plan. Since the saving account is purely individual, it contains no risk sharing at any level, the individual saving account is mostly offered as a bundling with insurance plan.

There is a high degree of freedom in participation as well as saving. The savers can be individuals, employers, employees or a combination of both (Matisonn 2000). They can choose to deposit money in the account at any period. The saving is at a voluntary rate, and receives 7.5% of interest as well as tax exemption. The tax exemption incentive also applies for savings, interests and withdrawals (Matisonn 2000). However, the plan contract states that the plan members can contribute up to the maximum amount of 810 euro annually. As a result, the average contribution is approximately 555 euro annually (Matisonn 2011).

Other than covering medical expenditures covered by insurance policy, but still being under the deductible threshold, the accumulated fund in the individual saving account can cover for health care that is not covered by insurance policy as well. The expenditure will be debited directly from the account as soon as the treatment is provided.

For individuals who are unable to save or for which the amount in their account is insufficient to cover health care, there is a lending program in which members can withdraw up to 12 months in advance to pay for the health care expenditure. The withdrawal is subjected to 7.5% interest. Other than that, there is a Wellness Program that offers prizes and bonuses for wellness activities and preventive measures (Matisonn 2011).

Nevertheless, the system is subjected to several selection problems due to high degree of freedom. First, the system is concentrated only among high-income class because private insurers that serves only high-income offer it. Second, young, rich and healthy individuals are mostly participating in the individual saving component since they have low risk in becoming sick. In contrast, the high-risk individuals, especially over 55 years old, are excluded to join the certain type of system (Adler 2005).

Canada

Canada is a democratic country with constitutional monarchy. The country is diverse in languages as well as cultures. Canada's economy is one of the world's largest. The country ranks the sixth globally in human development. It obtains many favorable places in international rankings such as education, quality of life, government transparency, and economic freedom.

Alike many other developed countries, Canada is experiencing a demographic shift towards an older population, with more retirees and fewer working individuals. Life expectancy in Canada is 78.89 years for males and 84.21 years for females (The World Fact Book of CIA, 2012). The old age dependency ratio was 22 in 2010 (United Nations World Population Prospects, 2010)

Health care financing in Canada is known as a single payer system. The services are mostly paid by the government, and mostly provided by private entities, including elderly care (Chenier, 1993). The government regulates the quality of care, as well as controls the prices. Furthermore, the systems are cost-effective because of their administrative simplicity. There is no need for the person who accesses health care to be involved in billing and reclaim.

For elderly care financing in Canada, elderly Canadians pay for their care based on annual income, and receive the subsidization from the government. They are charged based on whether they utilize long-term care or assisted living. Individual will pay 80% of their after tax income for long-term care, while the pay scale to the assisted living is 70% of the after tax income (Elder Care BC, 2010).

The proposal for capital funding for health care in Canada is Medical Saving Accounts (MSAs) for health care financing in general, but not for elderly care. It is an individual saving account coupled with high deductible catastrophic insurance. The proposal proposed that the government should provide MSAs to every citizen, and finance it through general tax revenue.

The system could be similar to the Registered Retirement Saving Plan (RRSP)[23]in the sense that the government will deposit an amount equal to health care contribution to individual saving accounts (Deber, 2004). As an example of Manitoba[24] data simulation (Deber, 2003), there can be approximately 2025 euro per year deposit from the government into Medical Saving Accounts system. The rate could vary depending on age. The amounts 1296 euro out of total 2025 euro should go to catastrophic insurance. The rest of 729 euro will save into individual saving accounts (Deber, 2003).

The saving into individual saving accounts should be mainly for routine purposes such as doctor visits or routine medical bills (Consumer policy institute, 1997). However, it could also pay for uninsured

[23] Registered Retirement Saving Plan (RRSP) is the saving for retirement.
[24] Manitoba is a Canada's region.

medical purpose such as dental care or others preventive care. When the balance of 729 euro under individual accounts is exhausted, the catastrophic insurance should pay out (Deber, 2003). Even though the initial aims of the catastrophic insurance would cover only hospitalization and major health expenditures.

There are various opinions towards implementing MSAs in Canada. In the Manitoba simulation, MSAs resulted in lower employer and employee costs and high-accumulated savings. MSAs or similar arrangements would have a potential to reduce health expenditures up to 20%. One would predict an even larger decrease in health expenditures if these simulations were to perform using the whole Canadian data (Fraser institute, 1996). However, MSAs contribute to more conscious health spending without improving individuals' health outcome (Fraser institute, 1996). In addition, MSAs is attractive to only healthy individuals because of low probability in becoming deteriorated in health. In consequence, the system would substantially increase both public expenditures and out-of-pocket costs for the individuals with severe illness or subjected to high cost treatment (Deber, 2004). The result of MSAs is still in vague.

Conclusion

There are only four countries that have a system of capital funding for elderly care. They are Singapore, India, Hong Kong and Australia. Most of the capital funding systems consist of a savings part and an insurance part. Furthermore the system is supported by a safety net for individuals who are unable to save for themselves. Individuals will save into individual savings accounts during the working period, and they will receive the benefits after retirement. The forms of benefit are different from country to country. For example, Singapore gives benefits in the form of a care annuity while India gives cash reimbursements.

The characteristics of the system are different depending on country conditions and aims of the implementation. Economic trade-offs greatly influence the design of the system.

(1) Social and individual conditions cannot clearly reflect a relationship of the degree of compulsion, as international experience is not consistent with the theory. However, an important social condition founded in this international experience study is the family value. The family relationship strongly determines how necessary the capital funding for elderly care system is. A strong family relationship is suitable for a capital funding system while a weak family relationship would imply that individuals have to depend more on a public system.

(2) Market conditions do not correlate with the degree of compulsion. It is partly due to a lack of information, which cannot strongly reflect the relationship. For example, well-developed markets in

Singapore and Hong Kong tend to have a compulsory system, while Australia proposes for a voluntary system. On the other hand, an undeveloped market such as India has a voluntary system.

(3) Compared to the previous conditions the political condition is the only one that relates to the degree of compulsion. The countries freedom ranking is consistent with the degree of compulsion. Apparently, Singapore and Hong Kong obtain very low scores in term of freedom, and tend to have a higher degree of compulsion for the system. While, India and Australia obtain high scores in term of freedom, they tend to have a higher degree of voluntariness within the system as well.

In any case, all the systems try to maintain a balance between compulsory and voluntary characteristics. Table 4.4 summarizes the degree of compulsion of the countries in this study.

Degree of compulsion	**Singapore**		**India**		**Hong Kong**		**Australia**	
Accumulation phase	Compulsory	Voluntary	Compulsory	Voluntary	Compulsory	Voluntary	Compulsory	Voluntary
Participation	X			X	X			X
Saving rate	X			X	X			X
Saving periods	X			X	X			X
Means of saving	X		X				X	
Contributors	X		X		X		X	
Financial intermediaries	X			X			X	
Decumulation phase	Compulsory	Voluntary	Compulsory	Voluntary	Compulsory	Voluntary	Compulsory	Voluntary
Health insurance		X		X	X			X
Service providers		X		X		N/A		N/A
Criteria of health service	X		X		X		X	
Form of benefits	X		X		X			X

Table 4.1: Degree of compulsion

Since the system is capital funding, an intergenerational risk sharing hardly exists. Still, some of the systems allow for intergenerational risk sharing at family level. For example, the Singapore system allows a family member to save on behalf of another, or can transfer the savings account as a bequest.

Risk shifting	**Singapore**		**India**		**Hong Kong**		**Australia**	
	Yes	No	Yes	No	Yes	No	Yes	No
Health		X		X		X		X
Longevity		X		X		X		X
Income		X		X		X		X
Financial		X		X		X		X

Table 4.2: Degree of intergenerational risk sharing

However, there is a larger degree of intra generational risk sharing from most systems. It can be observed in both elderly care and health care systems that individual savings accounts are always coupled with insurance. For the elderly care, the sharing is mostly done through elderly care insurance obtained during later stage of life. Most of the risks to be shared are health risks and longevity risks.

Risk sharing	Singapore		India		Hong Kong		Australia	
	Yes	No	Yes	No	Yes	No	Yes	No
Health	X			X	X		N/A	
Longevity	X			X	X		N/A	
Income		X		X		X	N/A	

Table 4.3: Degree of intra generational risk sharing

Nevertheless, the income risk is mostly shared through the safety net. In Singapore, Hong Kong and Australia, the safety net benefits are all means-tested. Mostly, they are in the form of subsidies for specific income or health groups.

Generosity of safety net	Singapore		India		Hong Kong		Australia	
	Universal	Means-tested	Universal	Means-tested	Universal	Means-tested	Universal	Means-tested
Income		X		N/A		X		X
Wealth		X		N/A		N/A	N/A	
Health		X		N/A		N/A		X
Age	N/A			N/A		N/A	N/A	

Table 4.4: Generosity of safety net benefits

The design of capital funding for health care systems in China, United States, South Africa and Canada are similar to the design of the elderly care systems. First, the degree of compulsion associates with the country freedom scores, while other conditions tend to have less influence on this. Second, there is low intergenerational risk sharing in such capital funding systems, but the intra generational risk sharing is necessary, especially for health and longevity risks. It can be observed that individual savings accounts are always coupled with insurance. This does not apply to only elderly care, but also to health care. The main risks to be shared are health risks and longevity risks. Last, the generosity of benefits depends on the economical development as well as the norm and value of the countries.

Chapter 5: The Netherlands

There is no specific ideal system from another country that the Netherlands can simply replicate. Nevertheless, the research gives guidelines towards designing an elderly care financing system for the Netherlands. This section is divided into two parts. The first part will argue for an implementation of capital funded elderly care that replaces a part of the current pay-as-you-go system of the AWBZ. The second part will give recommendations on the characteristics of the suggested implementation of capital funded elderly care in the Netherlands. These are based on the typology, economic trade-offs and international experiences as discussed in this thesis.

Smaller pay-as-you-go part

There are various discussions on the topic of the reform of the Netherlands elderly care financing system. The topic appears in a wide range of publications, for example national policy research, discussion forums or daily newspapers. There are different results and suggestions.

With the rise of elderly care cost, Edith Schippers, Health, Welfare and Sports Minister, said that reforming the elderly care financing system is the way to control the cost of elderly care in the future[25].

The Raad voor de Volksgezondheid en Zorg (RVZ) suggests limiting the benefits to only serious illnesses. People should prepare to pay more or turn to friends and family to help deal with minor problems. Otherwise, they should save up money to pay for help with the health care expenditures of old age. This practice will allow the AWBZ or WMO to focus on people who cannot look after themselves and therefore need care.[26]

According to the Algemeen Nederlands Persbureau(ANP), the National Health Council recommends people to sign a declaration at the age of 60. They have to outline how they foresee their care in later years and how they wish to pay for this.[27]

On the other side, Vierstroom, an owner of elderly residential care, launched a pilot scheme aimed at getting the families of dementia patients more involved in their care. Under the scheme, families have to make themselves available for four hours each month to take the patients for walks or spend time talking to them.[28]

[25] Financieele Dagblad, 20 August 2012
[26] Raad voor de Volksgezondheid and Zorg (RVZ) in Dutchnews.nl, Friday 8 June 2012
[27] Dutchnews.nl Friday, 8 June 2012
[28] Vierstroom director, Jeroen van den Oever in Nederlands Dagblad, Thursday 02 August 2012

To summarize from the publications, the public elderly care system should focus on severe cases and on people who are unable to help themselves. Individuals themselves should finance the remaining minor cases of care, for example, through help from their family members or by paying for more help. These are all alternatives to maintain a balance between elderly care contributions and expenditures. Either by decreasing the amount of publicly funded elderly care or finding alternative resources for elderly care. Notably, these discussions argue in favor of capital funding to take a larger role in the elderly care financing system of the Netherlands.

Still, the pay-as-you-go elderly care financing system cannot be wholly terminated since large numbers of the Dutch elderly depend on the current system. For these people, the benefits under the pay-as-you-go system, specifically under the AWBZ, should become smaller and gradually reduced. This would also imply that the part of capital funding for elderly care would gradually become larger.

Furthermore, the benefits criteria from the pay-as-you-go system should become stricter. It should focus only on major care such as residential care while the minor care such as home care should be allocated to capital funding.

Yet, there should be some public support for individuals who are unable to save for themselves. In this case, there should be a stand-alone safety net fund for individuals with both health care needs and a low-income. The benefits should be means-tested. This will be discussed later into more detail in the issue, which deals with the generosity of safety net benefits.

To obtain a rough picture about the size of the capital funding system relative to the pay-as-you-go system, estimation is made next based on the current AWBZ long-term care payments. The data for the estimation is based on the AWBZ expenditures in 2011 as presented in table 5.1.

AWBZ, long-term care (amount x € 1 million)	2011	
ZZP[29]'s mental care	1,281.3	5,20%
ZZP's disability care	4,436.7	18,00%
ZZP's nursing home care	7,636.7	30,99%
Outpatient care	3,603	14,62%
Day care and transportation	1,180.7	4,79%
Housing cost	2,593.4	10,52%
Other care in kind	703.7	2,86%
Above budgetary allowance	144.4	0,59%
Personal budgets	2,278.8	9,25%
Long-term care subsidies	79.2	0,32%
Administrative/ Miscellaneous AWBZ	250.7	1,02%
Long-term care undivided	456.9	1,85%
Total	24,645.5	100%

Source: Rijksoverheid 2012

Table 5.1: AWBZ categories

[29] ZZP stands for zorgzwaartepakket. It is a basic care package for those who have to stay in an institutional care. See http://www.cedrah.nl/index.php?paginaID=127

From table 5.1, the AWBZ system does not cover only elderly care costs. It covers long-term care costs, which consists of elderly care, mental care and disability care. In 2011 the elderly care cost under the AWBZ accounted for 16.1 billion euro[30]. The total AWBZ premium is 12.15%, and the part for elderly care is normally calculated as 8%. The elderly care part mainly consists of ZZP's nursing home care, housing cost, outpatient care and other small costs[31] for ZZP's nursing home care and outpatient care.

The following parts present numerical analysis for the size of the capital funding system relative to the AWBZ system. There are three scenarios for the size of the capital funding system. The only difference of each scenario is the components within the capital funding system and the AWBZ system.

Scenario 1

As stated earlier, the AWBZ system should focus only on severe or highly intensive cases such as residential care, while the minor cases such as home care could be reallocated to capital funding. For simplicity of the calculation, the contribution to the safety net will not be taken into account.

If this is taken into account, estimated elderly care expenditures under the proposed AWBZ will be approximately 9.1 billion euro. This number is obtained from the sum of ZZP's nursing home care (7.6 billion euro) and housing costs (1.5 billion euro). It means that the capital funding would become approximately 6.9 billion euro. This number comes from the sum of outpatient care (3.6 billion euro) and other small costs[32] for ZZP's nursing home care and other small costs of outpatient care (2.3 and 1 billion euro). This subdivision can also be seen schematically in figure 5.2.

[30] The data is based on the calculation of Judith Nab, PGGM.
[31] Small costs refer to day care and transportation, other care in kind, above budgetary allowance, personal budgets, long-term care subsidies, administrative/ miscellaneous costs and long-term care undivided. They are proportionally shared between ZZP's mental care, ZZP's disability care, ZZP's nursing home care and Outpatient care.

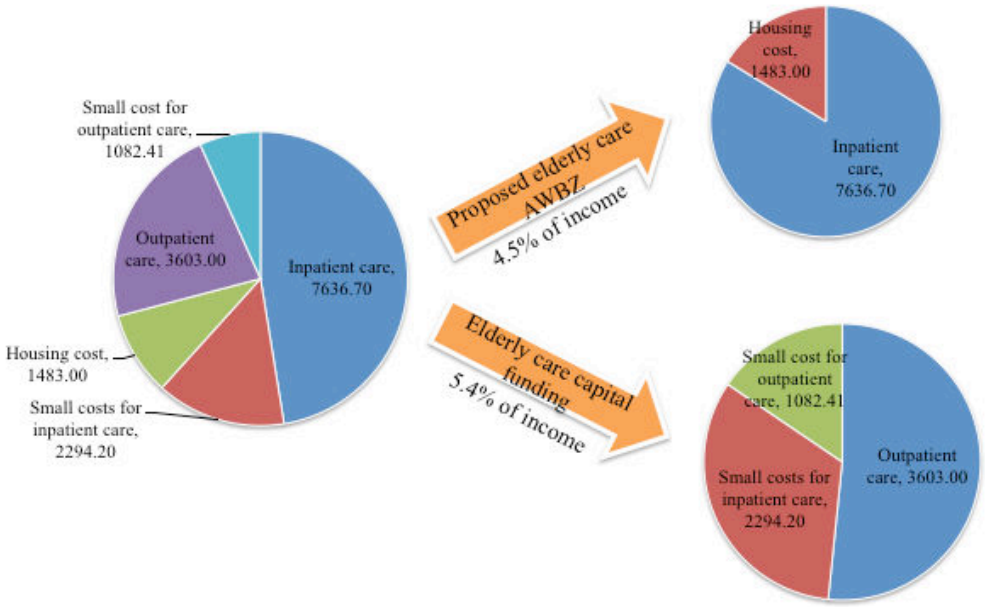


Figure 5.2: The size of the systems according to scenario 1

The average cost needed in 2011 for each individual is then calculated by dividing this 6.9 billion euro by the amount of inhabitants over 65 years old. Since there are 2.6 million inhabitants over 65 years old eligible for elderly care, this results in an average amount of 2,690 euro per person. If the assumption were made that the elderly care inflation grows at 3% per year and an average life expectancy of 85. The total cost of elderly care under the capital funding over the lifetime would be equal to 77,130 euros.

Furthermore, they can start saving at the age of 40 until 65 years old. If we assume an average salary of 33,000 at the age of 40, which grows at 1% each year, and the return on the savings account is 3%. The savings rate for an individual savings account would be 5.4%[33] per year. This would also imply that the rate of premium for the part of elderly care under AWBZ would be 4.5%, and 8.7% for the total AWBZ premium. For the sake of simplicity, this does not take into account administration costs, insurance profits, adverse selection and safety net fund.

Scenario 2

As in scenario 1, the AWBZ system should focus only on severe or highly intensive cases such as residential care, while the minor cases such as home care could be reallocated to capital funding. However, this scenario assumes that individuals who are able to save for themselves can partially pay

[33] In the following parts, the default rate of the contribution is an approximately 5.4-7.8% of income per year. This is according to the three scenarios of calculation.

for their intensive care. In this case, individuals can pay additional 20% of nursing home care and 20% of housing costs.

If this is taken into account, estimated elderly care expenditure under the proposed AWBZ will be approximately 7.3 billion euro. This number is obtained from the sum of 80% of ZZP's nursing home care (6.1 billion euro) and 80% of housing costs (1.2 billion euro). It implies that the capital funding part would become approximately 8.8 billion euro. This number comes from the sum of outpatient care (3.6 billion euro) and other small costs[34] for ZZP's nursing home care and other small cost of outpatient care (2.3 and 1 billion euro). This also incorporates the sum of 20% of ZZP's nursing home care (1.5 billion euro) and 20% of housing costs (0.3 billion euro). This subdivision is presented in figure 5.3.

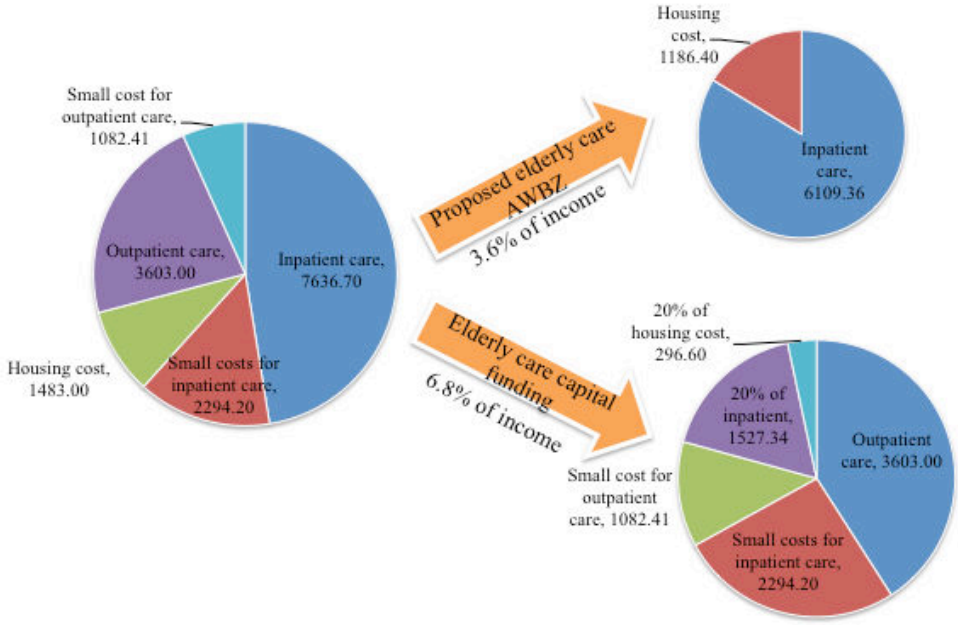


Figure 5.3: The size of the systems according to scenario 2

Then, the average cost needed in 2011 for each individual is calculated by dividing this 8.8 billion euro by 2.6 million inhabitants over 65 years old. This results in an average amount of 3,400 euro per person. If the assumption were made as in the proposal 1 that the elderly care inflation grows at 3% per year and an average life expectancy of 85, the total cost of elderly care under the capital funding over the lifetime would be equal to 97,287 euros.

Individuals can save at 40 until 65 years old. If we assume an average salary of 33,000 at the age of 40, which grows at 1% each year, and the return on the savings account is 3%. Therefore, the savings

rate for individual savings account would be 6.8%[35] per year. This would also imply that the rate of premium for the elderly care part under AWBZ would be 3.6%, and 7.8% for the total AWBZ premium.

Scenario 3

Similar to the scenario 1 and 2, the AWBZ system should focus only on severe or highly intensive cases such as residential care, while the minor cases such as home care could be reallocated to capital funding. This scenario also assumes that individuals who are able to save for themselves can partially pay for their intensive care. In this case, individuals can pay additional 20% of nursing home care and the total of housing costs.

If this is taken into account, estimated elderly care expenditure under the proposed AWBZ will be approximately 6.1 billion euro. This number is obtained from the sum of 80% of ZZP's nursing home care (6.1 billion euro). It means that the capital funding would become approximately 10 billion euro. This number comes from the sum of outpatient care (3.6 billion euro) and other small costs[36] for ZZP's nursing home care and other small cost of outpatient care (2.3 and 1 billion euro). This also incorporates the sum of 20% of ZZP's nursing home care (1.5 billion euro) and the total housing costs (1.5 billion euro). This subdivision can also be seen in figure 5.4.

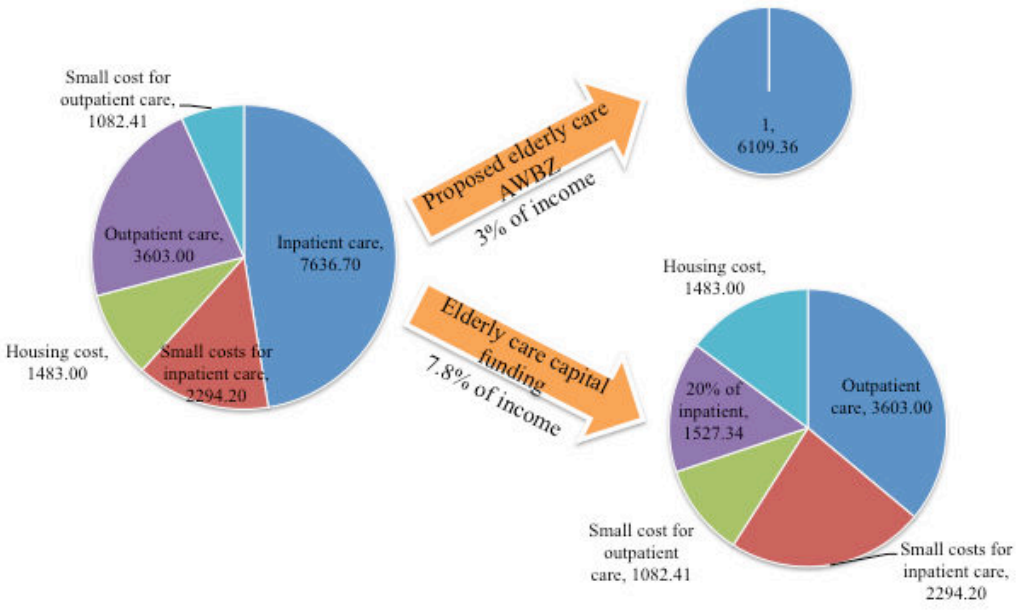


Figure 5.4: The size of the systems according to scenario 3

[35] In the following parts, the default rate of the contribution is an approximately 5.4-7.8% of income per year. This is according to the three scenarios of calculation.

The average cost needed in 2011 for each individual is calculated by dividing the 10 billion euro by the 2.6 million of inhabitants over 65 years old. This results in an amount of 3,850 euro per person. If the assumption were made that the elderly care inflation grows at 3% per year and an average life expectancy of 85, the total cost of elderly care under the capital funding over the lifetime would be equal to 110,398 euros.

Furthermore, they can start saving at the age of 40 until 65 years old. Still, we assume an average salary of 33,000 at the age of 40, which grows at 1% each year, and the return on the savings account is 3%. The savings rate for individual savings account would be 7.8%[37] per year. This would also mean that the rate of premium for the elderly care part under AWBZ would be 3% and 7.2% for the total AWBZ premium.

Recommendations on the characteristics of capital funded elderly care in the Netherlands[38]

Applying the typology and economic trade-offs from chapter 2 and 3 and the international experiences from chapter 4, this section presents the recommendation for the Dutch capital funding for elderly care system. Tables 5.5-5.8 present main important characteristics of the proposed capital funding system in the Netherlands.

General Characteristics		
Component of funding related system	**Funded component**	The proposed capital funding for elderly care in the Netherlands is an individual savings account. It will replace a part of the current AWBZ system. The funds from these savings should be used for minor care.
	Insurance component	There should be voluntary elderly care insurance with a default participation option.
	Pay-as-you-go component	The proposed AWBZ should be smaller relative to the current AWBZ. It should cover only major intensive care.
	Other components	There should be a stand-alone safety net fund to provide protection and subsidies for individuals who are unable to save for their minor care. It provides means-tested benefits, and is financed from tax on high-income individuals.

Table 5.5: General characteristics of the Netherlands capital funding system

[37] The default rate of the contribution should be between 5.4-7.8% of income per year. This is according to the three scenarios of calculation.
[38] See more in Appendix II and Appendix III

System management			
Administration	**Centralize**		The design of the capital funding system should be centralized.
	Decentralize		The management of the capital funding system should be decentralized.
Financial intermediaries			During the accumulation phase, at the beginning of the system, pension administrators should provide individual savings accounts. For the decumulation phase, there can be more choices including the health care insurance providers, banks and pension providers.

Table 5.6: System management of the Netherlands capital funding system

Accumulation phase			
Coverage			The capital funding should have a wide coverage. For the start up, it should cover only the second pillar pension participants. Later, it can expand the coverage to the whole population.
Participation	**Compulsory**		At the beginning, the participation should be compulsory for members of occupational pension.
	Voluntary	**Automatic**	
		Non-Automatic	
Contributors			Employees should save into their own savings account. However, employers can help employees by taking over the contribution. In addition, individuals can contribute on behalf of their family members.
Rates of contribution	**Voluntary**	**Default rate**	The plan participants can choose the rate of contribution. However, there should be a default rate of contribution. It is recommended at 5.4-7.8% of wage income.
		Limit of contribution	
	Compulsory		There should be a minimum limit of contribution. This should be compulsory (50% of recommended default savings rate).
Means of contribution	**Income**		The default contribution should be 5.4-7.8% of wage income.
	Tax		Tax is a means of contribution for the safety net fund.
	Home equity		Home equity is another option for capital funding for elderly care.
Period of contribution			Individuals should save from 40 years old until 65 years old. However, it might be more realistic to let individuals start from the age of working and gradually increase to the recommended default rate at 40 years old.
Incentives for participation/ contribution	**Tax exemption**		The most recommended tax exemption is the EET tax principal. The savings into the capital funding and the return will be exempted from tax, but benefit payouts are subjected to tax.
	Interest rate		The savings should receive a return on investment at market rate.

Table 5.7: Accumulation phase of the Netherlands capital funding system

Decumulation phase			
Individual saving goals	**Elderly care insurance**		Once individuals have saved into the capital funding for elderly care, and reach the age of retirement, they are allowed to make a decision for their savings. They can use this fund (1) to buy elderly care insurance (2) to directly pay for elderly care and family care (3) to put it into pension and receive pension annuities.
	Elderly care services		
	Other expenditures		
Form of benefits	**In cash**	**Reimbursement**	Individuals can claim the cash reimbursement directly from their elderly care insurance.
		Annuity	Individual can receive the benefits from the pension as an annuity.
	In kind		Apart from cash reimbursements, individual who participate in an elderly care insurance plan can choose to receive an in kind benefit.
Service Criteria	**Residential care/ In patient care**	**Nursing care**	
		Residential cost	
		Other related costs	
	Home care/ Formal care	**Out patient elderly care**	The capital funding for elderly care should be used for minor care costs such as outpatient care, day care and transportation, other care in kind, above budgetary allowance, personal budgets, long-term care subsidies, administrative and miscellaneous costs.
		Other related costs	
Service providers	**Residential care**	**Public institution**	
		Private institution	
	Home care	**Formal**	The savings account and elderly care insurance can be used for minor care cases from any care provider. The savings should be encouraged to use for informal or family care to stimulate stronger family relationships.
		Informal	
Withdrawal conditions	**Health related**	**Screening process**	
		Age or minimum period of withdrawal	The withdrawal age should be after retirement, currently 65 years old.
		Amount of withdrawal	
		Withdrawal for family member	The fund should allow for withdrawal for their family member.
	Non-health	**Transfer**	Individuals can choose to transfer the funds to pension savings when reaching the age of retirement.
		Bequest	The leftover savings in the capital funding for elderly care should allow for transferring as a bequest for family members.
		Age of withdrawal	
		Penalty of withdrawal	Withdrawal for non-health expenditures is subjected to full tax treatment.

Table 5.8: Decumulation phase of the Netherlands capital funding system

Figure 5.9 presents the components of the proposed capital funding system in the Netherlands. The capital funding for elderly care automatically covers the occupational pension participants when they reach 40 years old. Then, they are obligated to deposit a required percentage of income (50% of recommended default saving rate) into individual saving account. Additionally, they can choose to save as a percentage of their wage income according to a default rate. Otherwise, they can opt out for another desirable rate.

As soon as individuals reach 65 years old, they can make a decision to use their savings account. The participants can choose whether they would like to have elderly care insurance, pension annuity or savings account. However, they are allowed to keep the money in the account up till a maximum limit.

This individual savings account can be used for family care and frequent symptoms. It can be encouraged to use the excess amount of the savings account for buying elderly care insurance by setting up default participation. Otherwise this amount will be transferred to pension.

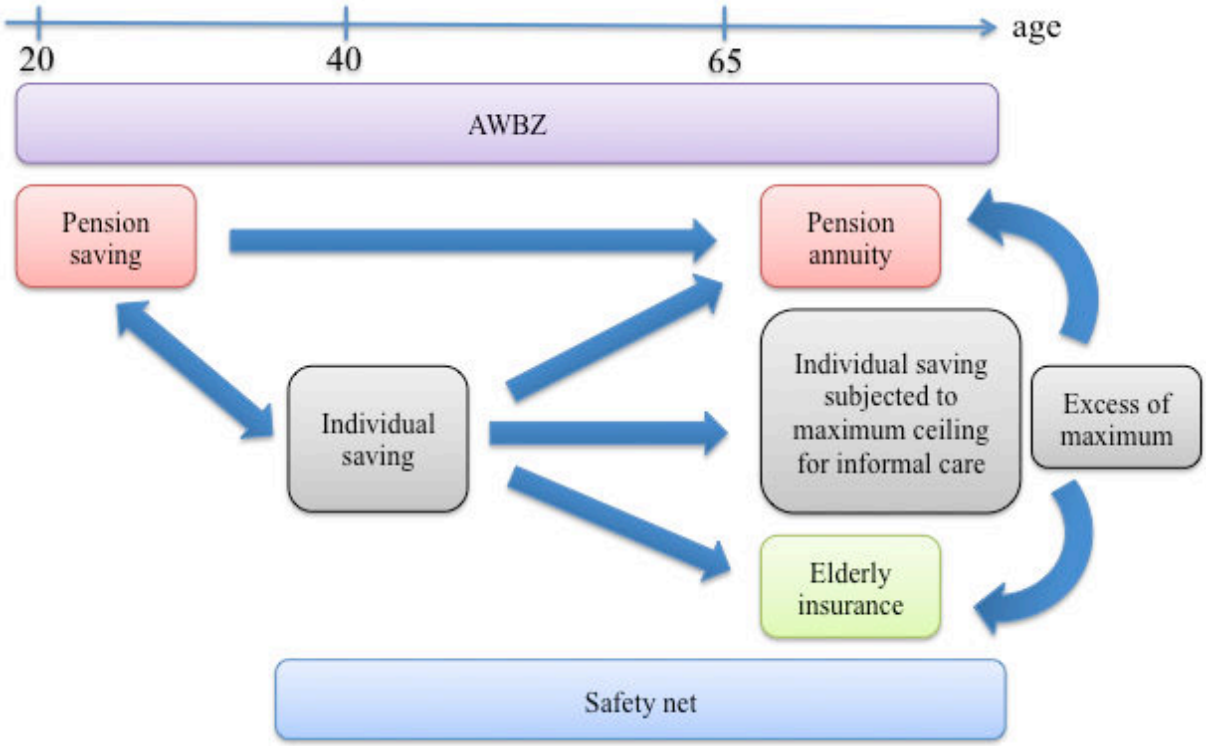


Figure 5.9: The components of the capital funding for elderly care

Degree of compulsion

The Dutch value freedom greatly. The Freedom House Organization rated the Netherlands as one of the freest countries. It received 1 out of 7 for political freedom and 1 out of 7 for civil liberties. Yet, the research of Van Rooij, Kool and Prast (2007) stated that the Dutch are prudent and thoughtful about their future financial situation. They found that 70% of the Dutch second pillar pension participants are in favor of the compulsory pension system because they believe that they will not save enough for themselves during their entire lifetime. Apparently, the Dutch put high value on their freedom, but at the same time, they would prefer to have some strict rule and regulation to protect their financial situation.

Therefore, there should be a balance between compulsory and voluntary decisions for the Dutch capital funding for elderly care system. A compulsory system is suitable for a prudent and risk-averse society, an unstable economy and less financial capabilities. Voluntary system is more suitable for a society with high mobility and heterogeneous populations.

The table below explains the characteristics of the capital funding for elderly care in the Netherlands with respect to the degree of compulsion. This is based on the economic trade-offs in chapter 3 and the international experiences in chapter 4. The first column presents the decision to be made under compulsory and voluntary mechanisms. The second column presents the compulsory mechanism. The third column presents the voluntary mechanism.

	Compulsory	**Voluntary**
Accumulation phase		
A. Participation	compulsory participation for second pillar pension	the system should expand later for wider population
B. Saving rate	minimum limit of saving (50% of recommended default saving rate)	default rate between 5.4-7.8% of income with opt-out option
C. Saving period	40 to 65 years old	-
D. Means of saving	percentage of income	home equity and default rate
E. Contributor	-	employer/ employee/ family members
F. Financial institution	pension administrator	-
Decumulation phase		
G. Insurance	-	default participation
H. Form of benefits	-	savings accounts insurance cash reimbursement in kind (direct service) pension annuity
I. Criteria of service	elderly care including outpatient care, other related cost and informal care	-
J. Care service provider	-	public or private health provider
K. Financial institution	-	pension provider/ health insurance company/ bank

Table 5.10: Degree of compulsion for the Netherlands[39]

During the accumulation phase, (A) the decision to participate (B) the minimum of saving (C) the period of saving should be compulsory. This will protect individuals from non-forward looking behavior and increase incentives to save.

(B) According to the estimation, the default savings rate should be between 5.4-7.8% of wage income. Individuals can voluntarily choose to maintain saving at this rate or opt-out for their desirable rate. Such a default option will serve as a guideline for a recommended savings rate. Apart from the default option, there should be a minimum amount of saving each year. The Australian system set the minimum requirement at 25% of regular cost of care. Perhaps, the Netherlands might be able to set the minimum amount at 50% of recommended default saving rate.

(C) The period of saving should be long enough so that individuals would have sufficient savings for their future elderly care expenditure. In this case, the Netherlands can replicate the period of saving from Singapore and Hong Kong. Both countries opt for the start saving age at 40 years old and last

[39] The economic trade-offs for the Netherlands is presented in Appendix II.

until the official retirement age, currently 65 years old in the Netherlands. This allows for flexibility of savings for younger ages. However, it might be more realistic to let individuals start saving by the age of working and gradually increase to the recommended default rate at 40 years old.

(D) Generally, the means of saving should take the form of a percentage of income. However, it should also allow for home equity as a means of contribution, and this should be a voluntary choice. The home equity financing will be discussed in more detail later on in this chapter.

(E) As in Singapore, the contributors for the system in the Netherlands should not be limited to only individuals. Employees should contribute into their own savings account, but employers can offer to take over the contribution (and receive tax incentives). This practice will tie a strong bond between employers and employees. In addition, the contribution can come from family members as well, and this will also increase a stronger family relationship.

(F) For the financial institution during the accumulation phase, pension administrators should manage the funds during the initial period, since saving for elderly care has many similar characteristics to pension savings (ANCIEN, 2010). Afterwards, the other financial intermediaries such as insurance companies or banks could introduce the elderly care savings to cover a wider population. The decision to choose a financial institution in the future should be voluntary. This will also increase competition and variety of saving products as happened in India and the United States.

(G) The calculation in the 'smaller pay-as-you-go part' is only based on average numbers per person. However, due to skewedness of income, the capability of savings can be more or less than the average. Therefore, an elderly insurance is highly recommended for the capital funding for elderly care implementation.

Unlike Hong Kong, individuals in the Netherlands should be able to choose whether they want to participate in risk pooling insurance. This is due to the fact that individuals are different in their insurance preferences, health characteristics and social backgrounds. On the other hand, this freedom will give rise to adverse selection, and health and longevity risks are not shared broadly. To prevent such problems, the capital funding policy should encourage individual to participate in elderly care insurance, for example; using default participation or giving higher benefits when participating in an insurance.

(H) After retirement, individuals have three options to manage their individual savings accounts. They are (1) individual savings account (2) elderly care insurance (3) pension annuity.

Individual savings account can be used for family care and frequent symptoms. However, they are allowed to keep the money in the account up till a maximum limit. The excess amount of the savings account is encouraged for buying elderly care insurance.

Within the elderly care insurance plan, the participants should be able to choose the form of benefits. The Singaporean system gives the benefits in the form of care insurance annuities while the Indian and the Hong Kong systems gives the benefits in the form of cash reimbursements. For the Netherlands, apart from cash reimbursements, there can also be direct benefit services. This can help patients from facing a complicated transaction payment. In addition, the cost of care might be lower due to a bundling agreement between services providers and insurance providers.

If individuals choose not to have elderly care insurance, they can direct the excess amount to a pension, and receive annuity payments.

(I) There should be certain criteria to divide between insurance- or savings-covered elderly care. The criteria for the insurance-covered elderly care should be limited to non-frequent and high cost cases. The expenses of more frequent and low cost cases of elderly care can then be covered by the savings accounts or pension annuities. This division also prevents moral hazard and overutilization as it limits the insurance based elderly care to a minimum.

(J) The freedom to go to any service provider is more convenient. It also increases competitiveness among service providers. Total freedom of choice however requires benefits in the form of cash transactions, which are less efficient compared to direct benefits. Therefore it may be better to offer a limited choice of service providers with in kind benefits.

(K) During the decumulation phase, financial institutions should stay in line with the three options of the savings account after retirement. In this case, individual savings accounts shall be operated by banks, pension providers shall administer pension annuities and elderly care insurance shall be provided by health insurance companies.

Apart from the discussed characteristics above, there should be some specific incentives in the system. For example there could be tax incentives such as income tax exemption or corporate tax exemption. The most recommended tax exemption is the EET tax principal. The savings into the capital funding and the return will be exempted from tax, but benefits payouts are subjected to tax. It can be that the benefits used specifically for certain type of care might be subjected to a lower tax rate. In addition, there should be some tax benefits for the contributor such as employer as well.

Intra generational risk sharing

International experiences of elderly care financing in Singapore, India and Hong Kong as well as health care financing in the United States and South Africa teaches us that the individual saving accounts are always coupled with a certain form of risk sharing, specifically in insurance. In this case, the main risks to be shared under the elderly care insurance are health risk, longevity risk and the risk that family members will not take care of their parents.

	Risk sharing	No risk sharing
Elderly care insurance Health risk	- Purely elderly care insurance	- No participation in elderly care insurance - Elderly care insurance with saving characteristic
Pension annuity Longevity risk	- Annuity payment	

Table 5.11: Degree of risk sharing for the Netherlands[40]

There are three options to which the savings for elderly care can be directed. These are:

- Pension annuity
- Individual savings account for elderly care expenditures and family care
- Elderly care insurance

Unlike Hong Kong but similar to Singapore, individuals in the Netherlands should be able to choose whether they want to participate in risk pooling insurance or simply use their individual savings account for elderly care. Otherwise, the individual savings will be converted to pension annuity.

This is due to the fact that individuals feature different insurance preferences, health characteristics and social backgrounds. For some individuals, elderly care insurance may not be necessary while it may be very necessary for others. But at the same time, such policy will give rise to adverse selection problems. In addition, health and longevity risks are not shared broadly.

To prevent such problems, the capital funding policy should encourage individuals to participate in elderly care insurance, for example using default participation. Otherwise, the remaining amount in the individual savings account should have a maximum, and the excess amount of the maximum should be compulsory used for elderly care insurance or pension annuity. This will prevent a selection problem as well as human behavior failure. Still, it can accommodate a freedom of choice.

Within the insurance plan, individuals should be able to choose the form of benefits. The Singaporean system gives the benefits in the form of care insurance annuities while the Indian system gives the benefits in the form of cash reimbursements. For the Netherlands, apart from cash reimbursements,

[40] The economic trade-offs for the Netherlands is presented in Appendix II.

there can also be direct benefit services. This can help patients from facing with a complicated transaction payment. Furthermore, the cost of care might be lower due to a bundling agreement between services providers and insurance providers.

In addition, there should be benefits criteria for elderly care insurance. The criteria should cover non-frequent symptoms so that individuals cannot unnecessary claim the benefits. For such frequent claims, the saving accounts or annuities are suitable.

Generosity of safety net benefits

With the increase in the level of education, people are more capable of making plans for themselves individually. The social change in the Netherlands is shifting more towards individualization, and the society tends to be more heterogeneous. Rooted deeply in social value, the majority of the Dutch still prefer solidarity. Hence, it is important for the capital funding for elderly care in the Netherlands to be supported by a safety net. The safety net will help in sharing income risk and relieve inequality.

Safety net with limited fund	**Wide eligible criteria, less generous benefits**	**Narrow eligible criteria, more generous benefits**
Financing	Public contribution (tax)	Public contribution (tax)
Eligible criteria	Larger threshold of income or wealth (value of assets) group	Smaller threshold of income or wealth (value of assets) group
Benefits	Lower level of benefit offering – Only severely cases of care	Higher level of benefits offering – Severely and non severely cases of care

Table 5.12: Generosity of safety net benefits for the Netherlands[41]

Based on the assumption of a limited public budget, the elderly care safety net benefits in the Netherlands should be means-tested. It should be targeted to a small population with high benefit levels. As in table 5.12, it could be narrower in eligibility criteria and more generous in benefits. This serves the primary function of the safety net, to help the ones who need it the most. Individuals with incomes above a certain threshold could contribute to the safety net. It might be in a form of public contribution or so-called taxation.

The safety net should be a separate system from the capital funding for elderly care. It should operate parallel to the capital funding system by a different administrator. In this case, the administrator could be a local government.

[41] The economic trade-offs for the Netherlands is presented in Appendix II.

Intergenerational risk sharing

Intergenerational risk sharing is an important concept of the Dutch society. For example the Netherlands facilitates intergenerational risk sharing not only through a public pay-as-you-go system, but also by forcing firms in particular sectors to join sectorial pension funds. Therefore it should be considered to have a certain degree of intergenerational risk sharing within the capital funding for elderly care. This can be done through the role of family relationships or pension savings.

Stronger family relationship through capital funding

A typology of long-term care systems by ANCIEN (2010) compares usage and financing of elderly care in different countries in Europe. It shows that the Netherlands is among the countries that have a high public spending on residential care and home care. It is partially due to the family culture. In the Netherlands, the nuclear family is common, and there is no direct obligation for children to take care of their parents. Therefore, older citizens take up more formal care. Meanwhile, in some other countries it is very common to have different generations living together. For example in China, Hong Kong and India there is a strong cultural norm that children have to take care of their parents as a reciprocity of the parents taking care of the children.

Hence, the capital funding for elderly care encourages stronger family relationships. The savings can be used to pay for 'informal or family care'. To put it differently, individuals can use the savings account to buy care from their children. This increases the role of family members in giving care, and the patient will also rely less on formal care. However, this account should have a maximum that can be used for family care and other frequent elderly care expenditures. During the accumulation phase, the family members can also save into the savings account on behalf of their family members as well.

Making use of high pension saving

The most important feature that makes elderly care different to other types of care is the similarity in characteristics compared to the pension system (ANCIEN, 2010). Since the Dutch pension system consists of a high savings rate and a well-developed pension market, there might be some ways to reallocate a part of the pension funds for elderly care. The main aims might be for family care and non-severe but frequent symptoms.

In this case, the pension administrators could manage the capital funding for elderly care. This has been the case in Singapore. The Medisave is managed together with the retirement savings. These two accounts are allowed to transfer funds between each other. Still, it is hard for the Netherlands to replicate the whole system from Singapore, since there are many characteristics that are not suitable for the Netherlands. Therefore, the transfer of funds between pension savings and elderly care savings

in the Netherlands should be allowed, but with only a limited amount. This is to avoid a selection problem and distortion of solidarity within pension system.

In conclusion, taking into account the family role and the characteristics of elderly care, there should be a separate savings account for elderly care. Furthermore, the individual savings account helps to prevent moral hazard and overutilization. However, considering the problem of solidarity and selection, the individual savings account might propose a problem in the long run.

Additional proposal

Home equity as another mean of financing

There is an increasing percentage of home ownership in the Netherlands. This is stimulated by the income tax deduction arrangement[42]. The home ownership in the Netherlands was 49.0% in 2000, 54.4% in 2003 and 58% in 2008 (CECODHAS Housing Europe, 2012). From this number, it shows that many individuals will have a lot of illiquid capital in the future. In this respect, this capital could be another means for financing the rising elderly care cost.

There are various debates as well as implemented systems of allocating home equity as a means of financing other expenditures. Still, there are many points of concern, for example shall the model of home equity be a sales model or a loan model, what would be the risks of implementing such a system. There are many international experiences that the Netherlands could learn from such as the United States, Australia, United Kingdom, France and Italy[43]. However interesting this topic is, this will not be mentioned further in detail since it is not part of the scope of this thesis. Besides, Ireen Hendriks discusses this subject in full detail[37].

In this proposed system design, a person who does not have enough income to save for capital funding can use their home equity as a means of saving. In this respect, there could be an institution that will value and convert the home equity into the capital for financing elderly care. As in the Australian proposal, there is an institution called the Australian Seniors Gateway Agency. They evaluate a value of home equity and specify a minimum level of accommodation bond. Then, individual can draw on the line of credit to fund their elderly care cost. If the balance of the bond reaches the minimum limit, there would be no further draw. If there were an outstanding of balance of the line of credit, it would be repayable to a partner, dependent child or a caregiver.

[42] The costs of a home mortgage are deductible from income tax. These include mortgage interest and financing costs. Since 2001, mortgage interest payments are deductible for a period of 30 years at most. (CBS 2012)
[43] [37] See more at MSc Thesis "Want to live in your own house as long as possible; is there a way of releasing equity that could be a solid solution?" by Ireen Hendriks.

Conclusion

The Netherlands	Compulsory	Voluntary	Risk sharing	No risk sharing	Wide eligible, less benefits	Narrow eligible, more benefits	Risk shifting	No risk shifting
Degree of compulsion	X	X						
Intra generational risk sharing			X	X				
Generosity safety net					-	X		
Intergenerational risk sharing							x	X

Table 5.13: The Netherlands balance of the system design

Similar to existing publications, this thesis argues for a smaller public pay-as-you-go elderly care financing system and to replace a part with a capital funding system. The current AWBZ system should focus only on severe cases, while minor cases such as day care or administrative costs should be reallocated to capital funding. Based on a rough estimation, the capital funding can replace at least 28% (6.9 billion of 24.6 billion) or at most 40% (10 billion of 24.6 billion) of the total AWBZ expenditures. The corresponding contribution rate for AWBZ will be between 7.2-8.7% of income per year.

The design of the system should maintain a balance between compulsory and voluntary decisions. A default recommendation should be given to encourage certain behavior. At the same time it is allowed to deviate from the default recommendation, as long as the compulsory limits are maintained. For example, the default saving rate can be set between 5.4-7.8%. In this case, individuals can have enough saving as recommended. This policy can apply to several more factors such as the default option to participate in elderly care insurance or the choice between different types of benefits.

Intra generational risk sharing can be done through elderly care insurance. The main risks to be shared are health risk and longevity risk. The capital funding participants should be encouraged to participate in elderly care insurance. This can be done through automatic participation and a maximum limit of savings in the individual account. With this policy, the risks will be shared more broadly.

Solidarity is a very important cultural aspect of the Dutch society. There should be a separated safety net to support the elder people who are unable to insure themselves. The means-tested safety net system by narrow eligible criteria and a high level of benefits will enhance solidarity between different income groups and generations.

The capital funding for elderly care in the Netherlands allows for intergenerational risk sharing. This can be done through family care and the pension system. Stronger family relationships can be encouraged through capital funding. The individual savings account can pay for informal care or the

family care. In addition, families can save into an account on behalf of their family members, and they can withdraw from the account for their family member care expenditures as well.

For the initial stage, the financial intermediary could be the pension administrator since the elderly care financing system has many characteristics similar to the pension system. Then, at a later stage, banks or insurance companies can offer such saving products as well.

Last, another alternative means of contribution other than the percentage of income could be home equity. This is due to the fact that there is a rise in elderly care costs, and it is expected that there will be a lot of illiquid home asset in the future. Therefore, individuals should be allowed to make a choice for themselves if they would like to use their home equity as another means of financing.

There are other aspects of the capital funding for elderly care implementation that have not been mentioned in this thesis. For example, there may be a transition problem such as individuals' preparedness for the change in the capital funding system. Another example is the cost of implementation such as administration cost. These issues will not be explored in this thesis. These topics are suggested for future research.

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Appendix I

General Characteristics

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Year		1984		2000	2012	
Component of funding related system	**Funded component**	The whole health financing system in Singapore is **Medical Saving Accounts (MSAs)**. The system consists of funded component, insurance components and pay-as-you-go component. The foundation component is **Medisave**. It is a compulsory individual saving account for health care related expenditures.	**Bhavishya-Arogya** is insurance for health care after retirement. However, it uses the concept of capital accumulation over lifetime.	Within the Health Protection Accounts proposal (HPAs), **Medisage** is an individual saving account for elderly care insurance after retirement.	It is a reverse mortgage program for elderly care.	**Health saving accounts (HSAs)** is similar to superannuation (pension) in Australia.
	Insurance component	Medishield and Medishield plus are public voluntary catastrophic insurance plans. It covers some catastrophic illness and hospital expenses. The enrollment of insurance is encouraged up to 75 years old. The premium on Medishield is set based on risk pooling within age specific group. It ranges from S$12 for those under 30 to S$132 for those between 66 and 70 years old. In addition, Eldershield is a voluntary public insurance for elderly care. The premium for all type of insurances can be paid from the Medisave accounts.		It is necessary to supplement the individual saving accounts with insurance for those who require more health care. Therefore, the proposal proposes for **mandatory public long-term care insurance**.		
	Pay-as-you-go component	**Medifund** is financed by taxes or government budget surplus. It guarantees the minimum health provision for low-income individuals. Apart from that, there is **Eldercare fund**. It is another safety net fund specifically for low-income elderly to finance their elderly care expenditures.		There should be a safety net for unfortunate individuals. For example, the government should provide **full subsidies** for poor and unemployed.		**Co-contribution or subsidies** could be provided to assist the low-income.
	Other components	Under MSAs system, individuals are allowed to have other private medical insurance plans. The premium of these schemes can be paid from Medisave as well.				

General Characteristics (continue)

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Year		1984		2000	2012	
Objectives of the Implementation	Resource mobilization	Medisave is an individual account that allows individual to save for their future health care expenditures.. It provides sufficient capital to meet the medical needs in old age.	It aims at financing the medical need during old age while one can pay the premium during working age.	The aim is to save for medical services after retirement.	It is a funding option for residential and community aged care which is long-term financially sustainable for government and individuals.	With aging and shrinking pool of employed population, it is difficult to fund the need of old population by pay-as-you-go system.
	Supplementary for insurance	Medisave is the foundation of the whole health care financing system. Health insurance plans, namely Medishield, Medishield Plus and Eldershield serve as supplementary for Medisave.		It can be introduced to support social insurance or to pay for supplementary health care.		
	Increasing equity and efficiency	At the beginning, Medisave was introduced as a complementary for tax based public health financing system to increase coverage for self-employed sector. Presently, within the health financing system, there are fund for unfortunate individuals who are unable to save for themselves called Medifund and Eldercare fund.		It aims at narrowing the medical services price gap between private and public providers.	The saving will earn a return that will attract the more investment capital. In addition, it will also cover the specific needs group such as people in rural area.	
	Solving asymmetric information	The previous Singapore health financing system was subjected to inefficient health care utilization. Therefore, the Medisave, as an out-of-pocket payment, discourages over consumption.		The system will promote the judicious use of health-care services.		
	Increasing competitiveness	Resulted from cost containment, the cost awareness consumers under Medisave help facilitate transparency of price and service among service providers..			The cost of care will be reflected, and the revenue will be earned to achieve the quality standard.	
	Protecting individual incentives	Singapore regards the contribution into Medisave as a personal saving rather than tax. As a result it minimizes the distortion on labor supply. In addition, it also promotes personal responsibility.		The system can promote self-responsibility without shifting the burden to the next generations.	It will be a comprehensive but fair co-contribution regime that assists elderly to access the equity in their home and pay for their care costs. Still, they are protected from catastrophic costs of care and from having to sell their home.	

Before Capital Funding for Health Care

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Transition process	Rapidness of the transition	The Medisave was initially introduced as a complement to the public health system. Therefore, the public scheme did not obsolete at all when the MSAs is introduced.				
	Transition generations	The people at the transition period are unable to cope with own responsibility, for example; those who retired before 1984 were unable to accumulate capital stock. Therefore, they have to depend on family or relatives. The government will step in later if the families are unable to help. However, the full implementation will reach in 2030.				
Previous financing system		Before the Medical saving account was introduced, the system was similar to the UK. It is public health that depends on the large tax based financing.				
Other existing health financing system		Medical saving accounts is a major system for financing the health expenditures. Apart from this, there is a small market of private health insurance.		The current system is high quality public health care services subsidized by the government.		HSAs will not replace existing system, but it will serve as a complement to make the health insurance system becoming more sustainable.

System Management

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Administration	Centralize	The system is designed and managed from the central planning, which covers most of the whole population.				
	Decentralize		Various private insurance companies offer the insurance plan.			There should be no limitation on who can provide annuities fund. The most convenient way is to introduce on stop shop for superannuation and saving accounts since there are similarity between health saving accounts and superannuation.
Financial intermediaries		Central Board of Provident Fund (CPF) is under the supervision of the Government of Singapore. It manages the three mandated saving accounts of Singapore, which are Ordinary account for normal consumption and investment, Special account for retirement, and Medical saving accounts.			There will be **Government-Backed Australian Aged Care Home Credit Scheme** that individuals can withdraw against their elderly care related cost.	
Investing policy		The fund mostly invests in the government bond in the capital market.		The investment fund should be allowed.		

Accumulation Phase

Country			Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name			Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Participation	Coverage	Whole population	The Medisave system covers every employed citizen who has an income above 234 euro per month. It accounts for 3.26 million or 86% of total employed population.				
		Socioeconomics status	The Medifund is a safety net fund that guarantees the minimum health provision for those who are unable to save. The saving for the fund is from the government budget surplus.				
		Health	For Medishield and Medishield Plus, participation is voluntary. Medshield is an insurance scheme for general catastrophic health outcomes. Medishield plus is a high-risk catastrophic insurance scheme for individuals who require more or higher level and intensive medical treatments.				
		Age	The MSAs members who are above 40 years old will be covered automatically by the Eldershield insurance. It is a voluntary insurance that cover elderly care. However, the MSAs members with disability are not eligible for this account.	It depends on the policy of insurance company. Mostly, the participation age is 25 years old.	It is mandatory for individuals at age 40-64 years old.	The reverse mortgage for elderly care offers to those who are older than 60 years old.	
	Compulsory		The Medisave is mandatory participation for every employed population with income above 234 euro or S$1500 per month. They have to save into this account until 55 years old.		The saving account is mandatory participation for individual at age 40-64. The long-term care insurance is mandated when individual reach 65 years old.		
	Voluntary	Automatic	The Medishiled, Medishield Plus and Eldershield are voluntary participation. Medishield and Medishield Plus automatically cover the Medisave members, with opting out option. Eldershield also automatically covers the Medisave members who are over 40 years old with the opting out option as well.				
		Non-Automatic	For Medifund and Eldercare fund, individual has to apply and approved by Hospital Medifund Committee. It depends on the criteria of eligibility as it is in the form of targeted subsidies.	Individuals are free to choose in having plan from various insurance companies.			The system should be voluntary.

Accumulation Phase (continue)

Country				Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name				Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Aged care home services
Contributors				The contribution is equally shared between individuals and employers. For the self-employed individuals, they have to take responsible for their own saving.	Individuals have to contribute by themselves.	It is individual contributions that everyone has to contribute for own account.		
Rates of contribution	Voluntary	Freely chosen			Individual can choose the rate of premium payment, but the benefits payout will be according to the premium.			
		Limits of contribution	Minimum	The minimum balance of Medisave was set to S$32,000 in 2011. Individuals cannot withdraw from the fund unless they have the sum amount exceed the minimum balance requirement.				There should be minimum disclosure requirement.
			Maximum	The maximum ceiling is S$41,000 in 2011.				The upper limit of contribution (co-payment) is 25% of the cost of care.
		Account balancing		In 2004, the amount over S$30,000 in Medisave will automatically be transferred to the ordinary saving account.				
	Compulsory	Age based		The contribution rate is increasing progressively with age. Under Medisave, the contribution starts at 7%, and then rises to 8% at 35 years old, and to 9% at 45 years old. It is 9.5% for people older than 50 years old. In addition, the insurance premium for Medishield, Medishield Plus and Eldershield are increasing with age as well.				
		Health based						In contrast to superannuation, which is age-based rate of contribution, the contribution could be health based.
		Income based		The 7-9.5% of wage are for Medisave, which shared equally between employer and employee. NOTE: The amount of 40% of wage are mandated from employed individuals to contribute to the three account which are ordinary saving account, special account for retirement and Medisave.		The contribution will be around 1-2% of total earning.	The rate of contribution is set according to the assessment of individual financial circumstance.	

Accumulation Phase (continue)

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Aged care home services
Meansof contribution	Income	The contribution is calculated as a percentage of wage income.	The premium has to pay into the plan during working age.	The mean of saving will be 1-2% of monthly salary.		Individual can contribute from tax income or pretax income.
	Tax	Medifund saving is the amount transferred from the government budget surplus.				
	Home equity				Government-Backed Australian Aged Care Home Credit Scheme helps individuals to converse their home equity into capital for elderly care cost.	
Period of contribution		The monthly contribution is mandated from the age of being employed. Members can stop and withdraw the fund at 55 years old. However, individual are encouraged to save up until 75 years old.	It is encourage from 25 until 55 years old.	The period of contribution is encouraged from 40 to 64 years old.		
Incentives for participation and contribution	Tax exemption	The saving to Medisave is tax deductible.	The plan is tax deductible.			The saving could subject to the same rate as superannuation, which is 15% tax exemption.
	Interest rate	Interest payment is set at market rate, which is guaranteed by the government. The interest rate for Medisave and Retirement account were set at 4% until 31 December 2012. The interest for Ordinary saving account is 2.5%. The combined three saving account that is exceed S$60,000 will receive 1% more interest.				

Decumulation Phase

Country			Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name			Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Individual saving goals	Insurance	Premium	The individual saving in Medisave can be used to pay for the insurance premiums of Medishield, Medishield plus and Eldershield.		The saving can be used to pay for elderly care or dental insurance premium.		
	Health care services	Health expenditure	The individual saving in Medisave can also pay for selected medical expenditures under the criteria set up by.	The plan is for financing medical needs of a person in old age directly.	The saving can be used to pay for elderly care or dental expenditures.		
		Deductible	Apart from premium and health expenditures, the Medisave can pay for deductible, out-of-pocket and copayment of Medishield, Medishield Plus and Eldershield.				
Determination of benefits	Defined benefit	Age based					
		Health based benefit	The claim of **Medishield** benefits limits to S$20,000 per year with the limit of S$70,000 for lifetime, it mostly reimburses at 80% of the total health cost that is above deductible. However, it does not cover normal deliveries, vaccinations, psychiatrics, AIDS relates, oversea treatment and drug or alcohol rehabilitation.				Capital preservation rules on HSAs could be health based.
		Income based					
	Defined contribution		**Medisave** is the defined contribution benefits because individual saves in their own individual account and withdraw from own account for medical related expenditures.	The benefits pay out according to the premium payments.	The benefits are according to individuals' contributions, which covers selected inpatient, and outpatient services.		
Form of benefits	In cash	Lump sum	The payment from the **Medisave** can be deducted at the point of service when health expenditures occur. The forms of Medishield and Medishield Plus benefits are reimbursements.	The benefits are in the form of reimbursements.			Individuals can choose form of benefits similar to superannuation such as spanning lump sum or annuities.
		Annuity	The **Eldershield** pay the insured amount of S$300 (€145) for a period of 5 years, which is used to pay for elderly care.				
	In kind						

Decumulation Phase (continue)

Country			Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name			Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Service Criteria	Long-term care	Elderly care	The Medisave does not cover long-term hospital care or emergency care. However, there are Eldershield and Eldercare fund that covers the long-term care. The premium on Eldershield can be paid from Medisave.	Reimbursement of surgical and medical expenses during hospitalization or domiciliary hospitalization starts from age of retirement and continues up to death.	The system is design to cover elderly care only. The elderly care insurance policy includes nursing home, visiting nurse services, and home aid visits.		
		Mental care	The psychiatric is included in the Medisave criteria; the range of withdrawal from this account is from S$150 to S$3000 per year.				
	Dental service				It can be used for dental care direct expenditure and insurance as well.		
	Surgery		The patient can use between S$150 and S$5,000 from the Medisave for a surgical fee.				
Service providers	Hospital	Public	The government provides direct subsidies to public hospital; polyclinics and elderly care home. Most of services under public provider can be paid from Medisave.		The service will be reimbursed from the saving account at the public sector rate only.	Government set the care price and gives subsidy to approved service providers.	
		Private	Though, the private sector dominates in primary care market, there are less service types from private sector that Medisave can pay for.				
		Non-Profit	The members under **Medifund** and Eldercare fund are subjected to the service and facility, which offered, by voluntary welfare organization (VWO).				
	Physician fee	Capitation	The physician in public institution receives rate of civil service pay scale plus clinical faculty supplement of 25% of their wages. Individual can use the maximum of S$50 from Medisave to pay for the physician fee.				
		Fee-for-service	The physician in private institution receives the rate of fee-for-service, which ranges from S$12 to S$120. The maximum of S$50 payment from Medisave applies to fee-for-service.				

Decumulation Phase (continue)

Country			Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name			Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Withdrawal conditions	Health related	Screening process	There is a requirement to go through the approval system to be able to withdraw the fund from Medisave. It is complex and time consuming.				
		Age or minimum period of withdrawal		Benefits only pay out after individual reaches a pre-selected vesting age such as minimum at 55 years old.	Withdrawal is allowed when individuals reach 65 years old. Therefore, individual are mandated to save for 25 years.		
		Amount of withdrawal	The amount of withdrawal from Medisave depends on the type of medical services. There are maximum of withdrawal for each type, which is determined from CPF.				
		Withdrawal for family member	Apart from the contribution from a family member when there is an account deficit, individuals are allowed to withdraw the fund to pay for medical expenditures of their family members as well.	Fund lying in the account can be inherited to the nominee as calculated according to the term of policy.	The withdrawal for spouse or dependent health expenditure is not allowed.		The health withdrawal could be for spouse and dependent.
	Non-health	Transfer	The fund is allowed to transfer to ordinary saving account in case of having account surplus in Medisave.				
		Bequest	In case of death, the saving account can be inherited to spouse or dependents.		The unspent money could be transferred to family members.		
		Age of withdrawal	The MSAs can be withdrawn at the age of 55, but it was encouraged to save up until 75 years old.				
		Penalty of withdrawal	It cannot be withdrawn for other purpose except medical services before reaching 55 years old.		The fund can be used only for the medical and health insurance related expense.		

Current Situation

Country	Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name	Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Reason for the plan rejection			**1.)** The political situation in Hong Kong made it impossible to implement mandatory medical saving system. The public consultations indicated that the public is not in favor of mandatory system (Food & Health Bureau 2010, p.7). **2.)**The previous proposal before individual HPAs was the collective HPAs plan. It contains the concept of intergeneration subsidization. However, the plan is not supported due to declining percentage of young people (Health and welfare bureau, 2001).		Aged care savings accounts were rejected as they would reduce choice over savings vehicles and it is essentially too late for this strategy to effectively fund the elderly care costs of the baby boomer generations. (Productivity commission, 2011)
New proposal for financing the health system			**1.)** In 2011, Food and health bureau proposed the health protection scheme, a government-regulated voluntary private health insurance scheme. **2.)** Yuan (2011-2012) proposes the setting up of a government health care fund for public hospitals. It will be a more effective way in dealing with the health care financing problem resulted from population aging. The plan is the public medical saving fund in which individual has to set aside 3% of wage every year. The sum should be set aside for public medical savings fund or a supplement for public hospital.		1.) Government owned insurance pool 2.) Continuation of pay-as-you-go funding from annual government budgets with co-contributions of PAYG tax financing system (Productivity commission, 2011).

Current Situation (continue)

Country		Singapore	India	Hong Kong (Proposal)	Australia (Proposal)	
Name		Medical saving accounts (MSAs) (Medisave, Medishield, Medishield Plus, Medifund, Eldershield and Eldercare fund)	Bhavishya-Arogya	Health protection accounts (HPAs)	Aged care home credit	Health saving accounts (HSAs)
Scholar arguments and opinions on capital funding system	Positive	**1.)** Taylor (2003) says that the results have been impressive, with excellent health outcomes, low costs and full consumer choice of providers and quality of care. **2.)** Ham (1996) says that the lesson from Singapore in implementing such system is sorting out the economic situation first, and then the health care system will take care of itself. **3.)** US Based National center for policy analysis (1996) says that Singapore program provides incentives "to reduce consumption and offer protection against extraordinary events and free-rider abuses". The study concludes that Medisave and MediShield have worked well as part of a system that balances personal savings for medical care and government management of the health care system that has kept overall costs relatively low.		Elderly persons with savings accounts will not be a burden to the younger generation, even if the percentage of elderly is increasing significantly (Yuen, 2011-2012).		
	Negative/ Ambiguous	**1.)** Hsiao (1996) concluded that Medisave has "caused financial hardship for Singapore's citizens" and "adversely affected the cost-effectiveness of its health care system". **2.)** Saltman (1998) indicates that MSAs are not a feasible policy option for developed countries that wish to maintain an economically efficient or socially responsible health care system. **3.)** Asher and Karunarathne (2001) say that there were other policies implemented at the same time when the MSAs were put in practice, therefore the causal effect of the Medisave on the health financing system could not be fully analyzed. In addition, the Singaporean government has provided limited access to data.		The individual account alone will not be sufficient for individual. They still have to rely on public healthcare safety net (Food and health bureau, 2008).		
Numerical measurements		In 1995 the total net value of the Midsave accounts was 12.7 billion Singaporean dollars (Prescott and Nichols, 1998). However, only 8.5% of Singapore's total national health expenditures came from MSAs, with 57.7% coming from patients' direct out-of-pocket payments (Hsiao, 1996). According to the data of the Ministry of health (2002), the total number of Midsave accounts summed up to 2.68 million with a total net value of 20.8 billion Singaporean dollars in 1999. In 2001, the Medisave covered 3.26 million or 86% (Ministry of Health, 2002). In 2006, more than 86% of member in the Medisave join the Eldershield insurance (Borda, 2011). Latest figures from the Singaporean ministry of health show that the number of Midsave accounts has increased to 3 million with a net value of 50.2 billion Singaporean dollars in 2010.		3% of salary of all wages is roughly sum up to HK$11 billion in 2011. If compare to the government earlier earmarked tax, which would be HK$50 billion for health care financing reform subsidization on private sector, the HPAs is tremendous smaller (Yuen, 2011-2012).		

Appendix II

Degree of compulsion

			Compulsory	Voluntary
Trade-offs			1. Facilitating solidarity 2. Preventing adverse selection 3. Preventing individual failures 4. Increasing incentives to save 5. Exploiting economy of scale	1. Tailoring to heterogeneity 2. Preventing moral hazard 3. Facilitating freedom of choices 4. Protecting incentives to supply labor 5. Encouraging competition
Decisions	Trade-offs			
Accumulation phase				
A. Participation	1-5		compulsory participation for second pillar pension	-
B. Saving rate	1-5		minimum limit of saving	default rate as 5.4-7.8% of wage income with opt-out option
C. Saving period	1-5		40 to 65 years old	-
D. Mean of saving	1, 3, 5		percentage of income	home equity
E. Contributor	1-3, 5		-	employer/ employee/ family members
F. Financial institution	2, 5		pension administrator	-
Decumulation phase				
G. Insurance	1, 3, 5		-	
H. Form of benefits	1, 3, 5		-	voluntary default participation in cash - reimbursement from insurance - annuity as pension benefit in kind - insurance saving into the accounts
I. Criteria of service	1, 2, 3		elderly care including outpatient care, other related cost and informal care	-
J. Service provider	1-3, 5		-	public or private health provider
K. Financial institution	2,5		-	pension provider/ health insurance company/ bank
Conditions	Trade-offs	Decisions		
Social/ Individual				
Preference for equity	1-4	A-C. E	high	
Risk aversion	1-4	A-H	high	
Intertemporal decision making	1-4	A-C, F	prudent	
Population				
Age	1, 3-4	A-H	older	
Health	1, 3-4	A-H	N/A	N/A
Income	1, 3-4	A-H	homogeneous	
Market				
Financial market	2, 4-5	B. D. G		well developed
Health market	2, 3-5	F, H		well developed
Information about risks	2-5	A-H	N/A	N/A
Information cost	2-5	A-H	N/A	N/A
Labor supply	4	A-F	inelastic	
Political				
Political process	1-5	A-H	efficient and stable	
Degree of freedom	3	A-H		high

Intra generational risk sharing

			Risk sharing	No risk sharing
Trade-offs			1. Reducing individuals' risk 2. Facilitating solidarity	1. Preventing moral hazard 2. Enhancing incentives to save and supply labor
Type of risk			A. health cost risk B. longevity risk	
Conditions	Trade-offs	Type of risk		
Social/ Individual				
Risk aversion	1-2	A-C	high	
Individual uncertainty	1-2	A-C	N/A	N/A
Market				
Information about risk	1	A-C	N/A	N/A
Information cost	1	A-C	N/A	N/A
Labor supply	2	C	inelastic	
Elderly care usage	1	A,B		high
Political				
Political process	1-2	A-C	efficient	
Norms and values	2	B,C	strong	

Generosity of safety net benefits

	Universal benefits	Means-tested benefits
Trade-offs	Facilitating solidarity	Enhancing and protecting incentives to supply labor
Regarding		Wage income Financial wealth - Pension income - Home equity - Bank saving
Conditions		
Social/ Individual		
Risk aversion	high	
Preference for freedom of choice in saving	high	
Market		
Information about insured condition	N/A	N/A
Information cost	N/A	N/A
Labor supply		inelastic
Saving		inelastic and high
Political		
Political process		efficient
Altruism		strong