

**Coping with Imbalances in Thailand's Low-Cost Housing Market:
Policies for Low-Income and Elderly Housing**

by

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DISSERTATION

Submitted in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

in International Development

GRADUATE SCHOOL OF INTERNATIONAL DEVELOPMENT

NAGOYA UNIVERSITY

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Acknowledgement

This dissertation could not be successfully completed without kindness of my advisor. Foremost, I would like to express my sincere gratitude to my advisor, Prof. OTSUBO Shigeru, for the continuous supports of my study and research especially for his patience, motivation, enthusiasm, and immense knowledge. His guidance helped me in all time of research and writing of this dissertation. I could not imagined having any better advisor and mentor for my study

Besides my advisor, I am deeply indebted to Associate Prof. Phaisal LEKUTHAI from Chulalongkorn University, Thailand for giving insightful comments, suggestions, encouragement and personal guidance which helped me to improve my knowledge and study.

Furthermore, I have to thank the Public Debt Management Office, Ministry of Finance, Thailand for the permission to pursue my study at Graduate School of International Development, Nagoya University.

Especially, I am deeply thanks to the Japanese government for giving me the Japanese Government Scholarship (Monbukagakusho: MEXT) throughout my study.

I also would like to express my special thanks for the National Housing Authority's staff for their help in providing and stimulating support for the Baan Eur Arthorn information and data. The related academic researches and journals are worth my appreciation for helping to sharp my brain and open my knowledge and vision widely.

Finally, my graduation could not be achieved without best wish from my family, Pol.Lt.Col. Nipol, Mrs. Suttida and Miss Sunisa ROIDOUNG, to help me for everything and always give me the greatest love and willpower until this dissertation completed. And last but not least, I gratefully thanks to all professors, my relation and my friends for their valuable comments, help, suggestions and encouragement.

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Acronyms and Abbreviations

ADB	Asian Development Bank
BEA	Baan Eur Arthorn
BOI	Board of Investment
CCTV	Closed-circuit television
CPF	Central Provident Fund
DSDW	Department of Social Development and Welfare of Thailand
FPRI	Fiscal Policy Research Institute Foundation
GDP	Gross Domestic Product
GHB	Govern Housing Bank
GSB	Government Saving Bank
HDB	Housing and Development Board
HUDC	Housing and Urban Development Corporation
IFEZ	Incheon Free Economic Zone
JHC	Japan Housing Corporation
JICA	Japan International Cooperation Agency
KTB	Krung Thai Bank
MHWL	Ministry of Health, Labor and Welfare of Japan
MLIT	Ministry of Land, Infrastructure, Transport and Tourism of Japan
MOI	Ministry of Interior of Thailand
MOF	Ministry of Finance of Thailand
NHA	National Housing Authority of Thailand
NESDB	National Economic and Social Development Board of Thailand

NPL	Non-Performing Loan
NSO	National Statistics Office of Thailand
PPPs	Public Private Partnerships
REIC	Real Estate Information Center
SIL	Subsidy Income List
SPSS	Statistical Package for Social Science
TAO	Tambon Administration Office
TDRI	Thailand Development Research Institute
TGRI	Foundation of Thai Gerontology Research and Development Institute
TPS	Tenants Purchase Scheme
UDC	Urban Development Corporation
UNESCAP	Economic and Social Commission for Asia and the Pacific
UNFPA	United Nations Population Fund
UR	Urban Residence
USA	United States of America

Chapter 1

Introduction and Background of the Study

1.1 Background

The United Nations' XXI Housing Policy Agenda emphasizes that each country should provide adequate housing for the entire population. Therefore, it is a duty for the government of Thailand to establish and conduct housing policies in order to support the growing population. Housing is one of the most essential inputs to national development. It creates opportunities in economic, social, political, and civic development. Residential construction stimulates the economy directly, by generating jobs, wages, and tax revenues, and indirectly, by increasing demand for goods and services created by new homes.

A strong economy creates demand for labor, increases household income, and enhances the household demand. Housing investment is a major driver for economic growth. Socially, housing is one of the fundamental needs, after food, clothing, and medical care. Safe homes and neighborhoods, in which residents enjoy housing conditions and public services, build social security and stability. In addition, housing is also an effective way to promote democracy, public participation, and good governance.

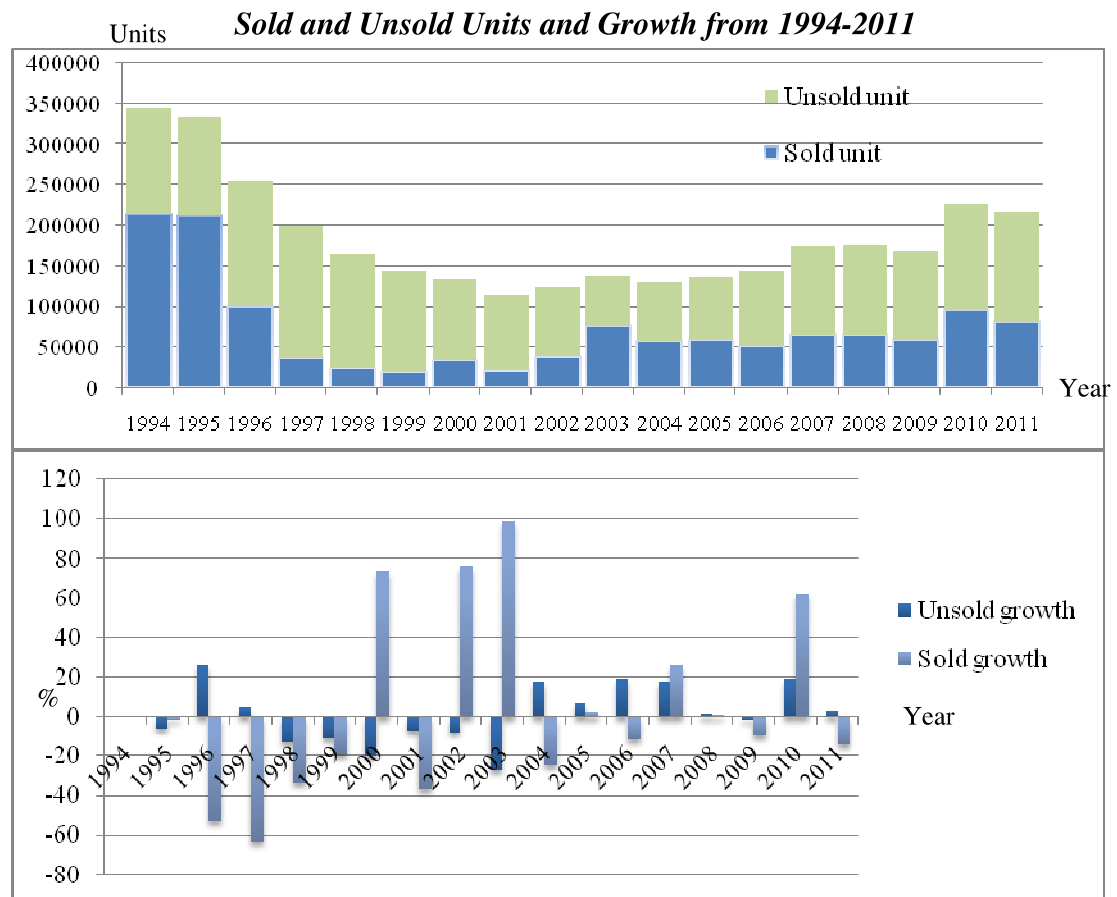
1.1.1 Unsold Units and the Fiscal Cost Problem

As previously stated, housing is essential to national stability, not only due to its direct contributions to the economy, but also through increasing the demand for goods and skilled labor. This results in tax revenues and a reduced percentage of people living in poverty.

For Thailand, the government's National Housing Authority (NHA), keeps building low-cost housing every year, resulting in an ever-increasing number of unsold units. The low-cost housing that NHA constructs is named Baan Eur Arthorn (BEA). Market principle mobilizes well for middle-and high-income people, more than for low-income households. However, the private housing market also faces the problem of unsold units (Figure 1.1)

despite the potential for increasing demand for housing (Real Estate Information Center, 2011).

Figure 1.1



Source: Real Estate Information Center, 2011

The total cost of BEA is 470,000 Baht per unit (Table 1.1). The selling cost is around 390,000 Baht (US\$ 13,000) per unit.

Table 1.1***Construction Cost of Baan Eur Arthorn***

Details	Housing type		
	Condominium 33 m²	Single/double house 20 m²	Row house 16 m²
Land price and related expenditure with land	86,000	78,000	86,000
Construction and public utilities	270,000	278,000	270,000
Total cost of land and construction	356,000	356,000	356,000
Plus tax profit and operation cost 18%	64,000	64,000	64,000
Total price purchases from entrepreneur/auction	420,000	420,000	420,000
<u>NHA's expenditure</u>			
Operation cost (control/monitor)	21,000	21,000	21,000
Interest rate during construction 4% (construction 16 months)	14,000	14,000	14,000
Community management expenditure 5 years	15,000	15,000	15,000
Total NHA's expenditure (Baht)	50,000	50,000	50,000
Total cost (Baht/unit)	470,000	470,000	470,000

Source: NHA, 2010

Examination of the project cost per unit reveals that the standard cost per unit is 470,000 Baht, regardless of area or housing type. The main cost consists of:

1) Land and construction - the buying price from entrepreneur/auction is approximately 420,000 Baht, per unit or approximately 89% of total cost.

2) NHA's expenditure is approximately 50,000 Baht per unit, 11% of total cost. This consists of operation cost and interest from construction and community management. The government subsidizes 80,000 Baht per unit, therefore the selling price is 390,000 Baht per unit. The project cost construction details are shown in Table 1.1.

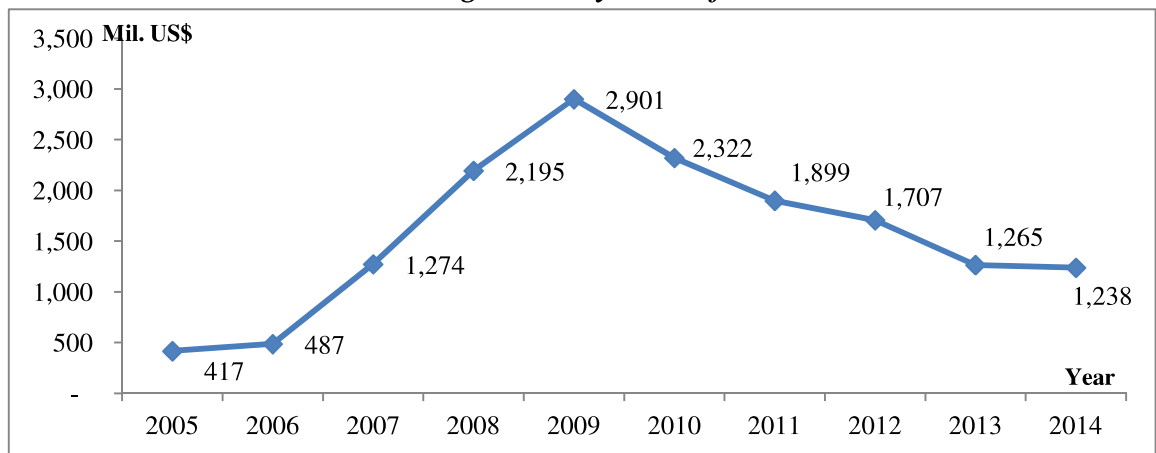
Government refuses to reduce the price of BEA because the selling price is already subsidized by almost 80,000 Baht (US\$ 2,700) per unit. The selling price has never been negotiated. The government still has many unsold units and most of the options are to sell. Moreover, in Thailand there is little public rental housing.

Government spends considerable sums of money for BEA construction. Unfortunately, the BEA does not match with low-income household needs. Therefore, NHA's debt has been rising rapidly since 2005. In 2009, the government tried to stop new construction and continue with in-work projects. Therefore, the debt started to decrease (Figure 1.2).

In addition to the debt incurred from BEA construction, it has been necessary for NHA to buy back repossessed units and to pay interest to banks when buyers default. NHA has had to buy back 500 BEA units per month (NHA, 2013). In 2011, the accumulated NHA's BEA buy-back debt was 60,081 million Baht (Figure 1.3). Therefore, this has created huge fiscal burdens.

Figure 1.2

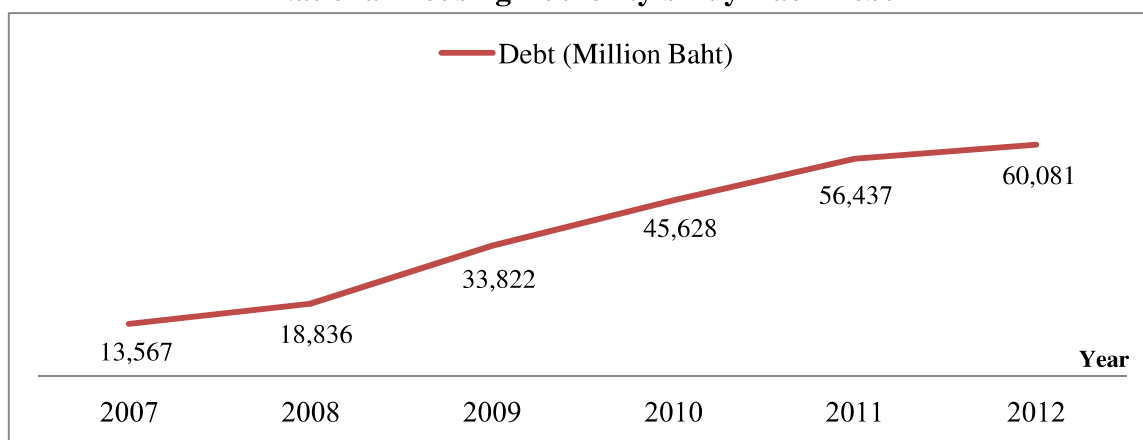
National Housing Authority's Debt from 2005-2014



Source: Public Debt Management Office, Thailand, 2014

Figure 1.3

National Housing Authority's Buy-Back Debt



Source: NHA's annual report, 2007-2012

Table 1.2

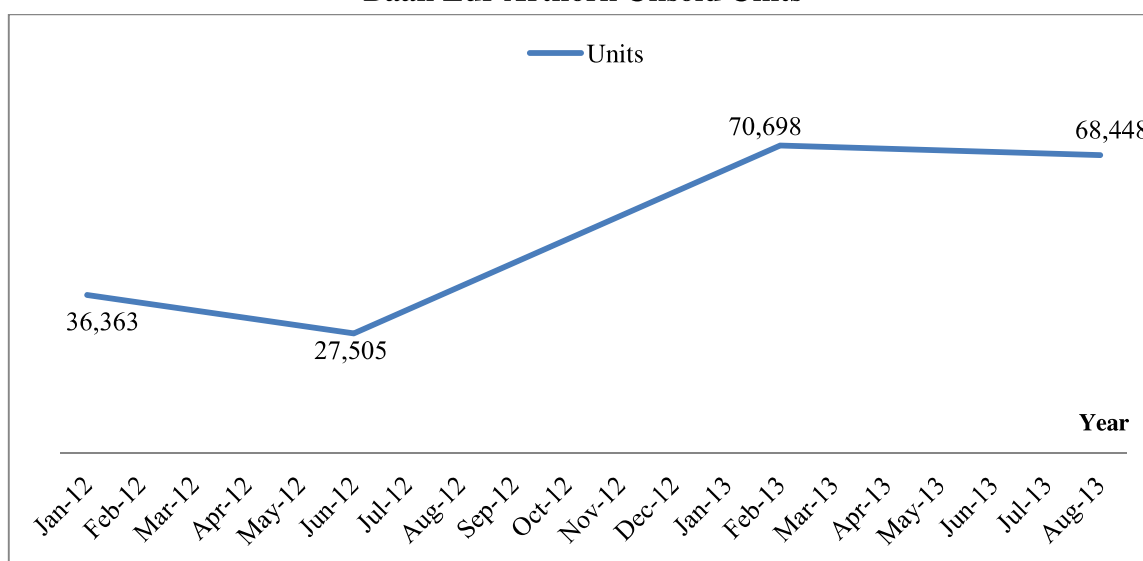
Construction Plan of Baan Eur Athorn Units by Year

	2012	2013	2014	2015	2016	Total
Low- and middle-income	20,520	16,303	20,444	16,198	12,269	85,734
Rental Housing	1,161	314	617	500	500	3,092
Total	21,681	16,617	21,061	16,698	12,769	88,826

Source: NHA, 2013

Figure 1.4

Baan Eur Arthorn Unsold Units



Source: Author's compilation based on NHA's report, 2013

According to Table 1.2, the NHA's strategic plan for 2012-2016, the body plans to build 100,000 low-cost houses and sell around 97% to low-income households. NHA keeps building low-cost houses while many units are still unsold, so the stock of unsold units continues growing. As of August 2013, the number of unsold BEA units is 68,488 units (Figure 1.4). Low-income households still need housing, but low-cost public housing does not meet their expectations with regard to location, transportation system access, and affordability. Unstable financial status is the main problem for low-income households' repayment default.

The unsold and mismatched housing problems need to be solved urgently in order to reduce the fiscal burden for public housing projects and stimulate people to own houses.

1.1.2 The Ageing Society and Housing Preparation in Thailand

Thailand's ageing population is growing at a significantly higher level than other countries in Asia such as Japan, Hong Kong, Taipei, Singapore, South Korea and China. The percentage of elderly Thai is forecast to increase from 12.8 in 2010 to 31.1 in 2040 (National Economic and Social Development Board of Thailand [NESDB], 2013). Elderly people have both medical and physical problems, such as astigmatism, dementia, and they have more difficulty moving things and climbing stairs. Most elderly Thai reside in homes that are inappropriate for their physical limitations. These homes include many steps, curves and slippery floors. (Murphy et al., 2002; Rupkhamdee et al., 2007).

Currently, Thai society still emphasizes the importance of taking care of elderly people. Therefore elderly people do not prepare for the after retirement living. In the future, the family size will decrease and the responsibility to take care of elderly people among the working generation will also increase. In addition, the rate of unmarried and divorced families is increasing. Hence, it is not possible to force every household to take care of older people. Currently, many elderly Thai are neglected by their children because their children have an obligation to take care of themselves and their own families. Many elderly people keep working although they are retired because their income from children, which is the main

income source, is not adequate for their daily life. Therefore, failure to prepare for self-sustained retirement and the subsequent need to depend on their children will become future problems.

Although Thailand is in the first stage of the aging society and elderly housing has yet to become a serious problem, the government has to play an important role for elderly housing management in order to prevent future problems. If Thai government does not prepare well, the aging population will become a serious issue that will also deplete the fiscal budget.

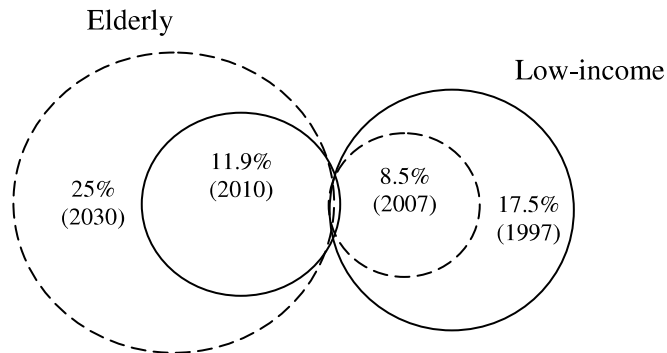
1.1.3 Necessity of Housing Subsidy

Government is the primary agency providing housing for low-income households and it has a responsibility to ensure the adequate support housing, financial, legislative and information for its population. Housing requires a heavy subsidy which government cannot avoid because it is part of social welfare. Housing investment has a positive impact on society in terms of generating a household income, especially for low-income households (TDRI, 2010). Government intervention and subsidies in housing programs, especially for low-income and elderly groups, are essential. A comprehensive housing program consumes considerable government expense; however, the government needs to invest because it is a social obligation. The government should consider the appropriate channels to maximize housing benefits for the population while remaining fiscally responsible.

1.1.4 Relationship between Low-Income and Elderly Groups in Low-Cost Housing Market

Figure 1.5

Low-Income and Elderly People (% of total population)



Note: in parenthesis presents year

Source: Author's compilation based on information from

Thailand National Statistics Office, 2007 and NESDB, 2010

The poverty line of Thailand is 1,443 Baht/month/person (US\$ 48). After retirement, elderly people tend to continue working as part-time employees. The income of an elderly worker in public and private sectors and State Owned Enterprise increased from 6,024 Baht/month (US\$ 200) in 2005 to 7,495 Baht/month (US\$ 249) in 2010 (Foundation of Thai Gerontology Research and Development Institute [TGRI], 2010). The percentage of low-income households decreased from 17.5% in 1997 to 8.5% in 2007. The number of elderly household is expected to increase from 11.9% in 2010 to 25% in 2030 (NESBD and NSO, 2010). This implies that most of elderly workers are not in low-income households.

The government established the minimum daily payment at 300 Baht in 2009, resulting in a gradually decreasing number of low-income households which will be middle-income households in the future. In the next 20 years, the percentage of households with a monthly income of 15,000 Baht and less will decrease from 53% in 2010 to 28% in 2030 (Japan International Cooperation Agency [JICA], 2013, p. 59-60).

It is the intent of this study to evaluate the needs of the low-income and the elderly and present these as a possible solution to the problems of the unsold BEA units.

1.2 Housing Information

1.2.1 Household Income

Table 1.3 shows that approximately 78% of Thai people had incomes of less than 15,000 Baht per month in 2000, and this percentage had decreased to 56% in 2009. The percentage of low-income household decreased because of the minimum salary law. The law, which was enacted in 2007, stated that every person should have a minimum salary of 10,000 Baht. The percentage of medium-income household in the greater Bangkok area increased from 44% in 2000 to 54% in 2009.

Table 1.3

Share of Household by Income Group (at current price)

Household Income (HH)	Income range (Baht/HH/Month)	Kingdom		Greater Bangkok	
		2000	2009	2000	2009
		Share (%)	Share (%)	Share (%)	Share (%)
Low	~15,000	78	56	46	27
Medium	15,001 - 50,000	19	37	44	54
High	50,001~	3	7	10	19

Source: Thailand National Statistics Office, 2000 and 2009

According to study of JICA and NHA's report in Table 1.4, the housing demand of Thai people still exists. For 2010 to 2020, the housing needs for the whole country are around 5.8 million units. The housing demand of low-income households is around 47% and middle-income household is around 44% for 2010-2020. The housing demand in the greater Bangkok area is around 58% of the entire kingdom. The housing demand of middle-income households in the greater Bangkok area is 1.8 million units, or around 31% of the national demand. However, housing needs are not reported in terms of housing type.

Table 1.4***Housing Need by Income Group***

	2010-2020	2020-2030	Total
	(1,000 housing units)		
Kingdom	5,801	3,557	9,359
Low	2,750	1,170	3,920
Medium	2,567	1,822	4,289
High	585	565	1,150
Greater Bangkok	3,323	2,328	5,651
Low	765	398	1,163
Medium	1,824	1,297	3,120
High	734	633	1,368

Source: JICA study team and NHA, 2013

1.2.2 Home Ownership

Table 1.5 describes home ownership by region in 1990, 2000 and 2010, according to the decennial census carried out by Thailand National Statistics Office (NSO). In line with increasing migration to urban areas in Bangkok, its vicinity and the Central region and the higher costs of living in these areas, the rate of ownership has fallen more rapidly than other parts of Thailand, as many new residents are determining that renting is both more economical and preferable to owning.

Table 1.5***Home Ownership by Regions***

	1990	2000	2010
Household (%)			
1.Bangkok	61	56	50
2.Vicinity	78	63	59
3.Central (exclude 1 and 2)	87	80	74
4.North	93	90	88
5.Northeast	94	93	92
6.South	87	82	83
Whole Kingdom	87	82	77

Source: NSO, 1990, 2000 and 2010

In the past, Thai families would remain as a central unit, with the employed members contributing to total household income. As Table 1.5 shows, home ownership in the Kingdom

decreased from 87% in 1990 to 77% in 2010. Especially in the Bangkok vicinity, the home ownership rate gradually decreased from 78% in 1990 to 59% in 2010, resulting in a total decrease of 18% since 1990. For the Bangkok area, the home ownership rate decreased from 61% in 1999 to 50% in 2010 or a total decrease of 11% from 1990.

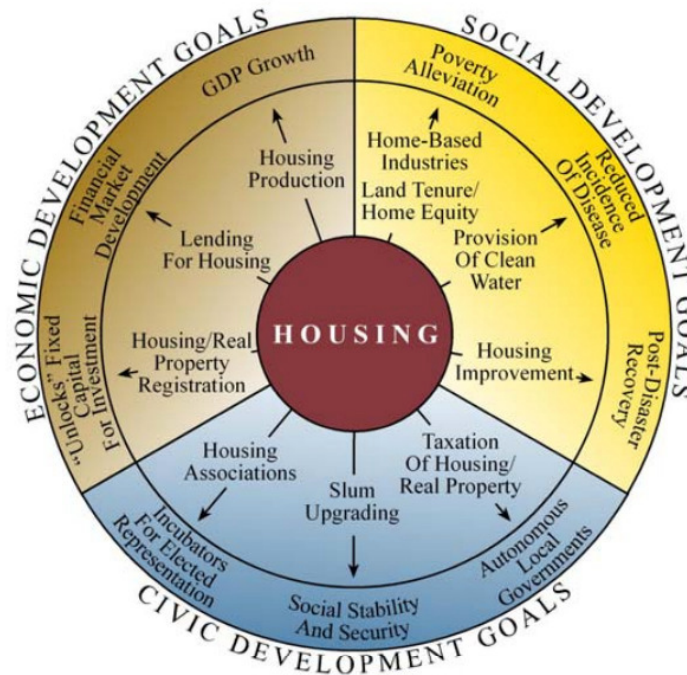
Because of uncertain economic growth, many people work in urban areas and search for better salaries. People postpone buying houses; therefore the home ownership rate in the city decreases. Moreover, the preference of Thai people, especially in the greater Bangkok and central urban area has changed from traditionally detached houses to condominiums. The home ownership trend is decreasing, especially in the greater Bangkok area. Therefore, stimulating home ownership or forcing people to buy housing may not be appropriate for the current situation.

1.2.3 Housing Benefits

Housing is essential to economic, social, and civic development (Kissick et al., 2006). Housing is a key driver in economic, social, and civic development. As summarized in Figure 1.6, many housing-related activities contribute directly to achieving broader socioeconomic and civil development goals.

Figure 1.6

Housing Benefits



Source: Kissick et al., 2006

1) Impact and Roles of the Housing in Developed Economies

Housing production contributes to the Gross Domestic Product (GDP). Housing construction especially, in low-income neighborhoods, is a stimulus to the creation of small businesses. Housing generates expenditures outside the housing sector in terms of contributions to the strength of an overall economy, wealth accumulation, and housing related and non-housing-related goods and services. Lending for housing loans benefits financial market development. Financial institutions try to promote housing loans by providing many incentives and benefits to the borrower. In addition, housing or real estate property registration will help to unlock fixed capital for investment in terms of using the house as loan collateral.

2) Housing as a Key to Poverty Alleviation, Health, Humanitarian Relief, and Reconstruction

Housing helps to eliminate poverty by allowing people to use their homes as place of business and employment or create extra income from rental housing. People must have a strong motivation to save for buying houses, so they may become familiar with additional saving and eventual investment. Slum clearance and having safe and sanitary housing will decrease health, social and environment problems, resulting in decreased medical costs.

3) Housing as a Foundation for Democracy, Governance, and Security

Housing associations stimulate community and public participation in order to develop and maintain the good infrastructure and environment in and around the community. Community involvement promotes democracy through the election of community committee members. Slum clearance creates social stability and safety while reducing potential criminal activity.

1.3 Issues, Significance and Uniqueness

1.3.1 Issues

According to the NHA's strategic plan for 2012-2016, the body plans to build 100,000 low-cost houses and sell around 97% to low-income households. NHA continues to build low-cost houses while many units are still unsold, so the number of unsold units continues to grow. Low-income households still need houses, but the low-cost public housing does not meet their expectations in terms of location, transportation system access, and affordability. In addition, unstable financial status is a major contributor to low-income households repayment default. Moreover, NHA has to buy some of the sold units back because buyer's repayment default amounts to around 500 units per month (NHA, 2013), resulting in fiscal burdens.

Moreover, elderly housing will become a serious issue in the future for Thailand around 2025 if the government does not become aware and make preparations at the

beginning stage of the ageing society. Many elderly households live in multi-story detached houses; most of them have difficulty living in their current houses because features such as stairs and toilets are not appropriate for their abilities. Moreover, the main income of most elderly households comes from their children, which is insufficient.

The market mechanism is not functioning well for low-cost public housing; therefore, a government housing intervention policy is needed in order to solve the problem of unsold units and create a sustainable society.

1.3.2 Significance and Uniqueness

According to the future projection of low-income group, the size of low-income group will be very small and remain so in the future. On the other hand, the number of elderly Thai people tends to increase. Elderly people without adequate income could be one of the target groups requiring government care. The Thai government does not pay adequate attention in elderly issue because it is a newly ageing society for Thailand and is in the beginning stage. If low-income and elderly households require social benefit, the government has to subsidize. Therefore, the study of low-income and elderly households should be great interest and importance to the Thai government. It is the intent of this study to evaluate the needs of the low-income and the elderly and present these as a possible solution to the problems of the unsold BEA units.

The Thai government has been evaluating the Japanese elderly housing policy issue. To reduce unsold units, fiscal burdens and create an effective elderly housing management system, it is possible to adapt and use unsold public low-cost housing units for low-income and elderly people by learning from Japanese experiences. Japan became an ageing society more than 20 years and has a long history of development and successful management. Although the respective countries have economic and social status differences, the Thai government applies many lessons learned from the Japanese example.

Furthermore, it is necessary for Thailand to investigate overall housing policies and management from developed countries in order to learn from their difficulties, mistakes and successes. Studying the past successes and failures will help the Thai government prepare housing policies with less fiscal burdens.

Mostly government intervention is necessary for the housing market for low-income and elderly groups. Two chapters of this paper have been devoted to evaluating the relationship between two groups and resolving the problem of unsold BEA. Additional chapter provides case study comparison between countries in order to investigate overall housing policies and management for reducing fiscal burdens

1.4 Research Objectives and Questions

1.4.1 Research Objectives

This research is primarily concerned with housing decisions by analyzing the determining factors of housing decisions for low and middle-income and elderly households in the greater Bangkok area, resolving the imbalance of housing units and reducing fiscal burden.

The study will focus on 1) factors of housing decisions considered by low and middle-income and elderly households and 2) housing policies for solving unsold units, fiscal burdens and improving the well-being of both groups in terms of housing options.

The objectives of this study are:

- 1) Identify the factors affecting low and middle-income and elderly households' housing decisions
- 2) Compare and analyze Thailand's housing policies with those of developed countries
- 3) Resolve the imbalance of public low-cost housing problem and
- 4) Recommend housing options for sustained housing development and reduce fiscal burdens

The results of this study will provide recommendations for reducing the budget deficit and improving the well-being of low and middle- income and elderly households.

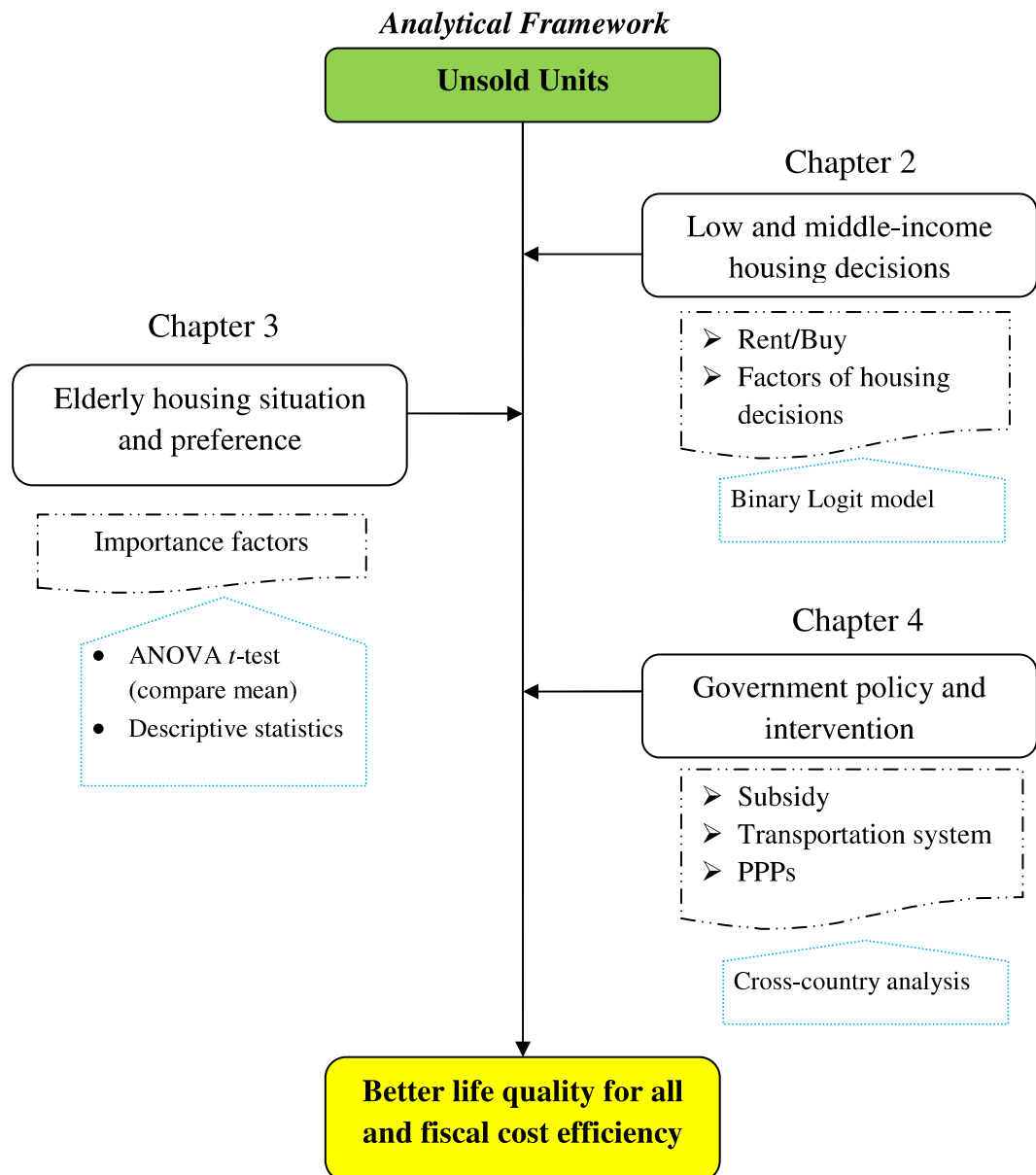
1.4.2 Research Questions

To more specifically define the existing problems, the following research questions are provided:

- 1) What are the factors of housing decisions for low and middle-income and elderly households?
- 2) What kind of housing policies should be implemented for solving unsold low-cost housing units problem?
- 3) What kind of government intervention is needed to enhance the well-being of low-income and elderly households?
- 4) What kind of housing policies should be implemented for fiscal burdens reduction?

1.5 Analytical Framework

Figure 1.7



Source: Author

This study focuses on clearing the imbalance of public low-cost housing units and reducing fiscal burdens. The research area selected was the greater Bangkok area. The expected results are increasingly better life quality for all and fiscal cost efficiency. The study consists of three main analytical chapters. Chapter two focuses on factors of housing decisions for low and middle-income households. Chapter three focuses on the elderly housing situation and factors affecting elderly households' housing decisions. Lastly, chapter four focuses on government policies and intervention.

1.6 Data and Sample Size

1.6.1 Primary data

This study collects primary data from two parts:

1) Interviews of low and middle-income and elderly households who currently live in the greater Bangkok area and attended Home Buyers' Expo using a questionnaire. The questionnaires were provided at the Expo and then the data extracted from the questionnaires.

2) Focus groups and in-depth interviews conducted nine times with nine housing related agencies: Chulalongkorn University, Government Housing Bank (GHB), Government Saving Bank (GSB), Krung Thai Bank (KTB), National Economic and Social Development Bureau (NESDB), Ministry of Finance (MOF), NHA staff, Real Estate Information Center (REIC) and TDRI. Interviewees were the key knowledgeable people, who could explain the important details of BEA project and housing loans very well. It is necessary to get information and their opinions about the housing situation and problems which will benefit future housing policy suggestions and solving unsold public low-cost housing units.

1.6.2 Secondary data

This study conducts secondary data from documentary research such as journals, pamphlets, websites, academic papers, international study reports and related research from Asian Development Bank (ADB), GHB, GSB, JICA, KTB, MOF, NESDB, NHA, REIC,

TDRI and World Bank in order to understand population trends, the housing market situation, government policy, housing allocation and financial problems which will be used to solve the unsold housing problem

1.6.3 Field Survey and Sample Size

This study collected questionnaires from the low- and middle-income and elderly people who currently live in the public or private housing projects in the greater Bangkok area and attended the Home Buyers' Expo. The sample size is 1,488 for low- and middle-income households and 80 for elderly households. Additionally, focus group and in-depth interviews with housing related agencies were used.

1.7 Research Methodology

The objective of this study is to explore potential solutions to the research problems, including housing decision factors, presented earlier by examining the roles of Thai and Japanese housing policies.

The Greater Bangkok area (Nakhonprathom, Samutprakan, Nonthaburi, Samutsakhon and Phatumthani) was chosen as the site for the following reasons:

- 1) Bangkok is the capital city of Thailand and has the highest population density and is where most of problems exist.
- 2) The housing market in the Bangkok area is the biggest, with the share of 70% (NHA, 2009).

1.7.1 Methodology

1) Collect secondary data of Baan Eur Arthorn projects in terms of documentary research of construction, sale and management, research and statistics.

2) Design questionnaires, an in-depth interview and focus groups in order to interview the low- and middle-income and elderly households, government, State Owned Enterprises, banks and research institutes.

3) Conduct in-depth interviews and collect 1,568 questionnaires, 1,488 for low and middle-income groups and 80 for elderly group, to get the information of importance levels, attitudes, problems and suggestions.

4) Analyze data, make conclusion and recommendations.

1.7.2 Data Analysis

After surveying and collecting data, I edited for the validity and the completeness of the answers before analysis. The overall approach is the 1,568 questionnaires, which used statistical tools such as E-VIEW and the Statistical Package for Social Science (SPSS) for computation of statistics: Regression analysis, frequencies, ANOVA t-test (to compare mean), Chi-Square test and descriptive statistics about the importance factors for housing decision.

The aim of data analysis is to provide effective policy recommendations, which consist of housing options for solving unsold units, elderly housing preparation policy and reducing fiscal subsidies.

1.8 Organization of the Study

This research consists of five chapters:

The first chapter presents the overview of research which presents the Baan Eua Arthorn housing project situation, the problem of unsold units causing large fiscal cost, research problems and objectives, research methodology, definitions and the components of the thesis.

The second chapter presents the analysis of factors of housing decisions for low and middle-income households.

The third chapter presents the analysis of the problem of unsold units and elderly housing management by applying Japanese experiences to Thailand.

The fourth chapter presents the analysis of clearing the imbalance in housing units and reducing fiscal burdens by comparing housing policies in terms of housing subsidy, housing and transportation development and increasing private sector participation.

The last chapter presents:

- 1) the conclusion regarding factors of housing decisions considered by low- and middle-income and elderly households,
- 2) the possible housing solution for solving unsold low-cost units, the elderly housing preparation, and housing subsidy, housing and transportation development and reducing government housing burden and
- 3) recommendations for development policy and suggestions for future research

The literature review will be concluded and presented in each chapter.

Chapter 2

Factors of Housing Decisions for Low and Middle-Income Households in the Greater Bangkok Area¹

2.1 Public Low-Cost Housing Demand

Low-income households need to live close to income-earning opportunities in the commercial and industrial city centers and towns in order to minimize the cost and time spent in getting to work (Economic and Social Commission for Asia and the Pacific [UNESCAP], 2008); but good land in the central locations is correspondingly always in high demand and expensive. As a result poor households are forced to live in areas of lesser demand or try to find low-cost housing.

Moreover, owning a house is the most prominent aspiration of a family, and as such the study attempts to identify the factors between renting and buying by setting the hypothesis that economic, physical environment, and household characteristics are the primary concerns for housing decisions.

The government by Prime Minister Thaksin Shinawatra wanted to eradicate poverty from Thailand. The government established the Overcome Poverty National Center in 2003 and tasked the Ministry of Interior (MOI) to conduct a survey for the Kingdom in 2003. People having problems requiring governments help have to register their needs and problems. The survey consists of eight types of problem in terms of land, homelessness, illegal jobs, student's job, fraudulence, debt, low-income houses and others. One person can register more than one problem.

As of October 2004, the total number of registered people was 8,258,275 with 12,198,509 problems. Table 2.1 presents the problems of Thai residence. Debt is the greatest

¹ This chapter is based on the following journal paper with revisions and additions. Phanida Roidoung. (September 2013). Factors of housing-decisions for low and middle – income households in the greater Bangkok area. *The Empirical Econometrics and Quantitative Economics Letter*, 2(3), 13-26.

problem that Thai people face. It is around 38% of the total problems, followed by land problems at 33%. Low-income housing problems are third highest with approximately 15%. This means low-income people do not have access to stable housing and need government help. Having stable housing may enhance the well-being of low-income people and help to solve social or criminal problems, especially in the urban slum areas.

Table 2.1

Problems of Thai People

	Problems	Number of problems	%
1	Land	3,968,155	32.53
2	Homelessness	5,064	0.04
3	Illegal job	7,550	0.06
4	Student's job/ Student's income	240,345	1.97
5	Fraudulence	82,721	0.68
6	Debt	4,680,936	38.37
7	Low-income houses	1,892,139	15.51
8	Others	1,321,599	10.83
	Total	12,198,509	100.00

Source: Department of Provincial Administration, Ministry of Interior (MOI), 2004

The Thai government should not neglect its peoples' low-income housing problems, but should comply with the United Nations' XXI Housing Policy Agenda which emphasizes that each country should provide adequate housing for the entire population.

2.1.1 The Low-Cost Housing (Baan Eur Arthorn) Problem

The Thai government's, National Housing Authority (NHA), implements the low-cost housing project called *Baan Eur Arthorn* (BEA). The government supports home ownership among low-income people by providing subsidies. The first low-cost housing demand registration was held in 2003. The total demand was 1,892,139 people (MOI, 2004). After registration, NHA constructs and provides houses to low-income households. Most of the housing units in the first phase have been sold. NHA keeps constructing low-cost houses to respond to low-income's households' demands. Unfortunately, since 2007, unsold units have become serious problems. The main reasons are 1) limited loan accessibility for low-income

households, 2) delayed housing deliveries and 3) low-cost housing projects located far from the work place and the city.

The NHA keeps building low-cost housing every year, so the stock of unsold units increases. Market principle mobilizes well for middle and high-income people, but not so well for low-income households. However, the private housing market also faces the problem of unsold units' (Figure 1.1 in chapter 1) even if the demand for housing increases (REIC, 2011).

The government has constructed BEA since 2005. The total cost of BEA is 470,000 Baht per unit. The selling cost is around 390,000 Baht (US\$ 13,000) per unit. The government refuses to reduce the price of BEA because the selling price is already subsidized by around 80,000 Baht (US\$ 2,700) per unit. The government still has many unsold units.

NHA has stated that it intends to build additional BEA for sale to low-income households; however, these do not meet the needs of low-income households. As there are existing BEA which have been repossessed and remain unsold, continuing to build without concern for the consumer market results in unnecessary expenditure and increases the government debt.

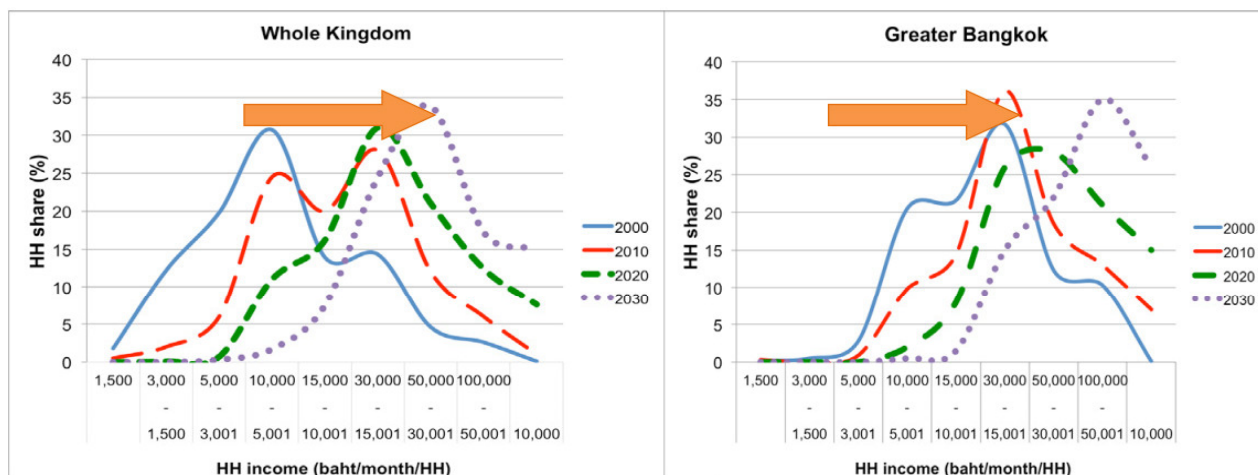
2.1.2 Number of Low-income Household and Income Distribution

As a result of the aforementioned income growth, the number of households in middle- and high-income group will increase, increasing the various affordable housing options. Since the government enacted the minimum daily payment at 300 Baht in 2009, the number of low-income households has decreased gradually, and many will be the middle-income households in the future. In the next 20 years, the number of households with monthly income of 15,000 Baht or less will decrease from 53% in 2010 to 28% in 2030. In the greater Bangkok area, it will decrease from 25% in 2010 to 15% in 2030. Conversely, the middle-income group will increase from 40% in 2010 to 55% in 2030 in the Kingdom; however this

group will decrease from 55% in 2010 to 26% in 2030 for the greater Bangkok area (JICA study team and NHA, 2013). These data can be seen in Figure 2.1 and Table 2.2.

Figure 2.1

Future Household Income Distribution



Source: JICA study team and NHA, 2013

Table 2.2

Future Composition of Income Group

	2000	2010	2020	2030
Kingdom				
Low	72.3	53.0	45.0	27.7
Medium	23.4	40.0	43.6	54.5
High	4.3	7.0	11.4	17.8
Greater Bangkok				
Low	33.3	25.4	22.0	15.0
Medium	51.7	54.6	55.0	56.0
High	15.0	20.0	23.0	29.0

Source: JICA study team and NHA, 2013

2.1.3 Research Objectives

Studying ways to reduce the housing imbalance is crucial to fiscal cost reduction. In this chapter, factors supporting responsible housing decisions by low and middle-income households are examined and researched to determine the principle motivators driving housing selection. When these factors are understood, strategies can then be developed toward

sale of the currently unsold units. Moreover, this study attempts to find the common factors behind housing decisions by both low- and middle-income households. It will then provide recommendations for resolution of the low-cost housing imbalance in Thailand.

The objectives of this study are:

- 1) Identify the factors affecting low and middle-income households' housing decisions
- 2) Solve the problem of unsold units and
- 3) Recommend housing options for low-income households

This study will first present the low-income household information. Next, a review of the documentation evaluated in the preparation of this study will be provided, and then the research framework, model and methodology will be presented. Following this material will be the field surveys and collected data. After that will be the analysis of the collection data followed by conclusion and policy recommendations.

2.2 Statistics and Research Questions

2.2.1 Income Ceiling of the Eligible Household

The National Housing Authority defines low-income household as:

- In 2003-2004, the household income could not exceed 15,000 Baht/month
- In 2005, the household income could not exceed 17,500 Baht/month
- In 2006-2007, the household income could not exceed 22,000 Baht/month
- In 2008, the household income could not exceed 30,000 Baht/month
- From 2009, the household income could not more than 40,000 Baht/month

The people wanting to buy a BEA house must have the following minimum qualifications:

- 1) Thai nationality
- 2) Age of majority
- 3) Not bankrupt

4) Household monthly income must not exceed the maximum level identified above for low-income households

5) Do not have their own house

6) Agree that the hire-purchase right cannot be transferred to the others

7) Do not undertake a hire-purchase contract party right with NHA (If the person having the property rights used to be the contract party, the contractor has to cancel the existing contract upon receipt of the BEA right)

8) Have to stay in the project province more than 6 months and can reserve only one unit

2.2.2 Housing Needs

Table 2.3 shows the housing demand of each income group in the greater Bangkok area. In 2010-2020, the housing needs forecasted for the greater Bangkok area was around 3.3 million units. Low-income households will require 800,000 new housing units by 2020. By 2030, an additional 400,000 units will be needed for low-income households.

Table 2.3

<i>Housing Needs by Income Group in the Greater Bangkok Area</i>			
	2010-2020	2020-2030	Total
	(1,000 housing units)		
Greater Bangkok area	3,323	2,328	5,651
Low	765	398	1,163
Medium	1,824	1,297	3,120
High	734	633	1,368

Source: JICA study team and NHA, 2013

As low-income households have housing needs and public low-cost houses are available, this provides great opportunities for the study of factors of low-income households housing decisions. The conclusion reached will help to identify low-income households housing needs and allow the government to provide unsold units, providing for low-income households' needs.

2.2.3 Low-Cost Public Housing

1) Low-Cost housing

As previous stated, the BEA project was established by NHA. It is a state-owned enterprise under the Ministry of Human Development and Security. The government encourages people to have a stable home life by constructing housing for underprivileged, low-income people, lower levels of government officers and government employees. Housing Welfare is managed by the Thai central government and not through local governments. The central government acts as the house ownership distribution provider by allocate housing supply for low-income people through the BEA project. The project preparations are designed by the central government and not open to change by local governments.

2) Objective of Housing Supply

The project was implemented under the National Housing Act of 1994 and amended in 2007 by setting the objectives as follows:

- To enhance the housing security for target groups by constructing the standard housing in an appropriate environment, provided with the basic public utilities with the affordable price for the target group.
- To strengthen the good relationships between family, community and society and also support the community participation in order to create a sustainable community.
- To enhance the economic activities to create more income opportunity for residents by providing community elements.
- To develop related housing agencies to provide housing for underprivileged and low-income people in general; for instance, financial institutions and social development agencies.

3) Housing pattern

NHA assigns the appropriate housing pattern for each location by considering the functions of daily life, land price and target group repayment capability. There are two types of housing pattern:

- Condominium: 5 stories, consisting of one bedroom with a size of not less than 33 m²
- Horizontal building consisting of:
 - A single house, 2 stories, with land size not less than 20 m²
 - A row house, 2 stories, with land size not less than 16 m²
 - A row house, 1 story or 2 stories, with basement, with land size not less than 15 m²

Picture 2.1

Baan Eur Arthorn



(a) Condominium



(b) Single house

Source: NHA, 2013

2.2.4 Housing Decisions

Buying and renting have pros and cons, as summarized in Table 2.4. However, the housing decision depends on each household's characteristics, economic situation, and future expectations.

Table 2.4

Pros and Cons of Renting and Buying a House

Items	Renting		Buying	
	Pros	Cons	Pros	Cons
1) Price	Fixed price	-	-	Fluctuating price
2) Equity	-	No equity build up	Equity build up	Fluctuating equity
3) Mobility	Move easily	-	-	Difficult and complicated
4) Maintenance	Less payment	-	-	Large payment
5) Initial Costs	Small	-	-	Large down payment
6) Fix payment	-	Fluctuating payment	Fixed payment	-
7) Remodel	-	Cannot	Can	-
8) Right	-	No selling right	Selling right	-
9) Tax advantage	-	No tax advantages	Gain tax advantages	-
10) Ownership	-	No	Yes	-
11) Community	-	Less community relationship	Close community relationship	-

Source: Author's compilation

1) Price: the monthly rent is fixed for the whole contract or the term of the lease. Therefore, renters have to provide the same amount of money for rent. Housing can prices fluctuate depending on location, time, and various factors.

2) Equity: renters cannot gain equity because they do not have their own residence. Homeowners do own the house and property; however, the equity is based on the current market price.

3) Mobility: renters can move easily to live in other locations, while it will be more difficult and complicated for buyers because selling houses may not be possible during the first few years of ownership. The renter may have to either wait until completion of the lease or possibly pay penalties for breaking the lease. The home owner would be financially obligated for the house until such time as the house was bought from the owner.

4) Maintenance: Renters are not responsible for house or property repairs, providing they did not cause the damage. The home owner has a financial investment in the house and is bound to protect the investment.

5) **Initial Costs:** renters generally are obligated to provide the first month's rent and a security deposit prior to moving into the residence. Home owners are usually required to provide a larger down payment to secure the home loan and then make subsequent monthly installments.

6) **Fixed payment:** the landlord can increase the monthly rent after the lease contract ends, but buyers can stabilize their payments because monthly payments are relatively stable.

7) **Remodel:** since the rental housing does not belong to the renter, the renter does not have the right to remodel the house. Conversely, the home owner is free to remodel the house as desired.

8) **Right:** renters do not have selling rights and do not gain equity. On the other hand, owners can sell the house as desired or required.

9) **Tax advantage:** there are no tax advantages for renting, but home mortgage interest may be non-taxable.

10) **Ownership:** a rental housing cannot be passed down from one generation to another, while buying a house is a stable and secure place for the family to live and grow and can be inherited by the owners' surviving family members.

11) **Community:** due to the transient nature of renters, the occupants may not develop a close community relationship, while in contrast home owners generally remain for longer periods of time and may gain a sense of community. Most homeowners are involved in the well-being of their communities such as working together for better facilities and less crime.

2.2.5 Research Questions

1) What factors are considered when making the decision whether to rent or to buy housing?

2) What changes to the existing housing policies would be recommended to make the existing BEA units more marketable?

3) What kind of housing options should be given in order to support housing for low-income households?

2.3 Literature Review

There are many studies concerning housing decisions considered by every income group in developed and developing countries. Most of the studies found that location, environment, and transportation are primary considerations.

2.3.1 Housing Decisions

Housing options, whether to rent or buy, depend on each household's characteristics, economic situation, and future expectations.

Table 2.5

Housing Decisions

Factors	Authors	Results
1. Location	Cuphik et al. (2003) and Danko et al. (1990)	Buying decision
	Kauko (2007)	Factors determining of the success or failure of housing development project
2. Transportation	Wachs et al. (1993) and Kevine (1998)	Housing decision making
	Wand and Li (2000)	The most important factors for housing decision
3. Environment	Dokmeci et al. (1996)	Every income group decided to live close to relatives, clean place and quiet neighborhood
4. Income	Al-Momani (2003)	Housing space, good neighborhood
	Thailand Development and Research Institute (2009)	Permanent household income and household head's age have a positive effect on buying decision.

Source: Author's compilation

There are many studies concerning the housing decisions considered by each income group in developed and developing countries, as shown in Table 2.5. Most of the studies found that location, environment, and transportation are important.

Cupchik et al. (2003) and Danko et al. (1990) found the distance to the workplace, schools, convenience stores, and public transportation are significant points for consideration when buying a house. Kauko (2007) found that a good location is an important factor that determines the success or failure of the housing development project. Location factors such as quality of the neighborhood, schools, and perceived safety are considered when making

decisions (Wachs, Talor, Levine, and Ong, 1993). Levine (1998) also found location to be the most important factor because it helps to reduce the commuting time, whereas Kauko (2006) found that consumers consider functionality and spaciousness more important than location.

Wang and Li (2006) determined that low and middle-income households in China consider living convenience and accessibility to public transport as primary factors in housing selection. They also determined that buying a house is a multidimensional exercise, requiring consideration of additional factors including tenure options, housing types, neighborhoods, and locations. Dokmeci, Berköz, Levent, Yurekil and Cagdas (1996) found that every income group in Istanbul decided to live close to relatives, in sanitary conditions and quiet neighborhoods. Al-Momani (2003) found housing space, good roads, good transportation, single-story houses, greenery, high-quality neighborhoods, and quiet communities are important for Jordanian households.

Marife (2002) showed that housing demand in the Philippines is determined by housing affordability, which includes income, price, and credit accessibility. In addition, housing prices in Philippines have rapidly increased when compared with income. Meanwhile, the Thailand Development Research Institute (2009) constructed a choice-selection model and estimated this by using a multinomial Logit/Probit technique which is similar to Heckman's selection bias correction models. The results are that a stable household income and household head's age have a positive effect on the buying demand, and that married persons are more likely to have higher housing demands than single people.

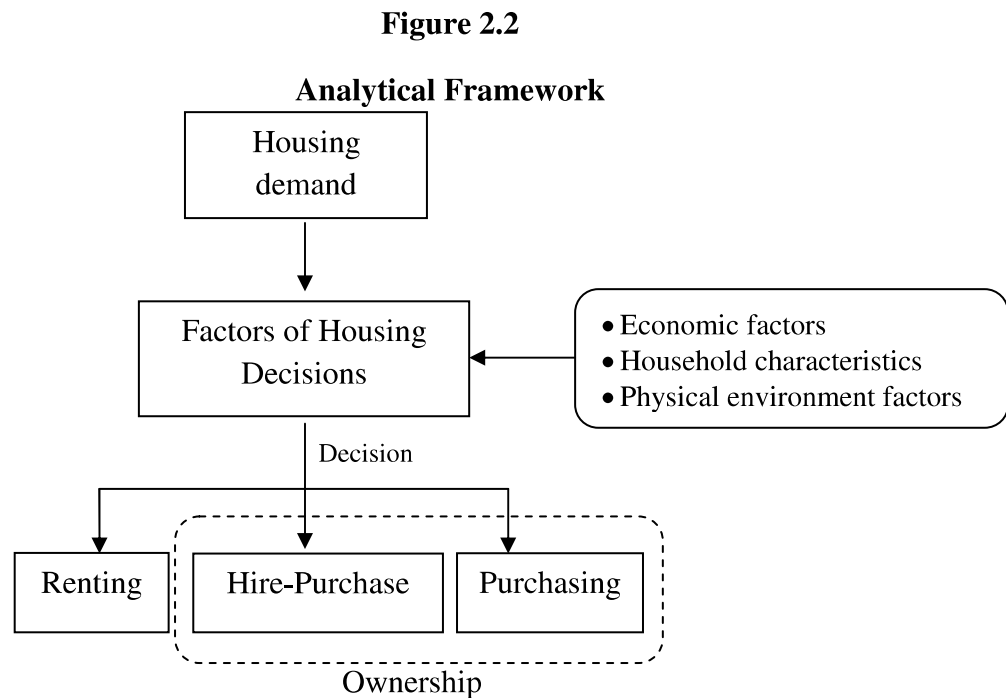
2.3.2 Uniqueness

Most of the studies do not separate the research by income group and specify the study in terms of the renting or buying decision. The uniqueness of this chapter is that it considers both current and future housing decisions and separation of the study into 1) renting decision, and 2) buying decision, considered by low and middle-income households. This study

attempts to find the common housing decision factor for both low- and middle-income households and resolve the low-cost housing imbalance in Thailand.

2.4 Model and Methodology

2.4.1 Analytical Framework



Source: Author

Some people wish to buy houses while some people prefer to rent houses. Housing decisions for each person are based on different household economic factors, household characteristics and physical environment factors. People who can afford houses and wish to settle in one place may decide to buy houses. Home ownership can aid in wealth accumulation and will be passed on to future generations. People who do not have enough financial resources or are not ready to settle in one place may rent houses because renting allows ease of mobility. A hire-purchase housing option is good for people who cannot afford to buy currently but wish to buy their residence in the future.

2.4.2 Assumptions and Definitions

The assumption is the respondents are classified into low-income group and middle-income groups.

“Low-income household” is defined as a household which has a monthly income not more than 30,000 Baht.

A “buyer” is defined as a person who has already bought a house by himself or herself, and has resided in that house less than 3 years. The rationale is that the preference and economic situations should have remained constant.

A “renter” is defined as a person who rents a house and does not specify the period of residence, because the renting contract is for two years or less.

“Future expectation” is defined as the expectation to buy or rent within 5 years.

2.4.3 Regression Model

The housing decision depends on economic aspects, household characteristics and physical environment factors.

$$D^H = f(\text{Economic factors, Household characteristics, Physical environment factor})$$

According to the housing decisions equation, the assumptions for “Renting” are set as follows, while “Buying” is vis-à-vis:

1. Economic factors: Household income (-), Household payment (-) and Housing prices (+)
2. Household characteristics: Cannot predict because of variations in taste
3. Physical environment factors: Location (-), Transportation system (-), Community and social quality (-) and Transportation time and cost (-)

The Logit model in general form is presented as:

$$Z_i = \beta_0 + \beta_1 DPR_i + \beta_2 LOC_i + \beta_3 INC_i + \beta_4 HPRICE_i + \beta_5 TCOST_i + \beta_6 TRANS_i + \beta_7 FAU_i + \beta_8 SENV + \beta_9 MPAY + \varepsilon_i \quad [2.1]$$

By the same model, Equation 2.1, the analysis is divided into low-income households for renting decisions, and low and middle-income households for buying decisions. The variables and code descriptions are explained in Table 2.7.

The reason for analyzing low-income households' renting decisions is to find the determining factors of renting decisions, in order to solve the existing problems of unsold public units' and enable low-income households to stay in stable housing. In addition, the reasons for analyzing low and middle-income households' buying decisions are to increase home ownership and prepare for the future. The future number of low-income households will decrease and the number to middle-income households will increase. Therefore, the combination of low and middle-income household analysis is appropriate for the future preparation.

2.4.4 Determining Factors of Housing Decisions by Low-Income Households

The dependent variable is Z value, which means the log value of the probability of the sample group to rent houses are:

Current decision

Z=1 when the sample group decided to "rent" a house (365 samples)

and Z=0 when the sample group decided to "buy" a house (81 samples)

Future decision

Z=1 when the sample group decide to "rent" a house (44 samples)

and Z=0 when the sample group decide to "buy" a house (244 samples)

The current decision set is comprised of only buy and rent (446 samples). Persons who will remain with their families have been dropped from the current decision. In the future decision set there are 288 samples. More than 81 samples have been deleted from this set because some of these people have not yet thought about future decisions or plans. This is illustrated in Table 2.6.

Table 2.6

<i>Cross-Tabulation: Low-Income Households</i>				
		Current rent		
		Buy	Rent	Total
Future rent	Buy	51	193	244
	Rent	0	44	44
	Other	30	128	258
	Total	81	365	446

Source: Author's questionnaire

2.4.5 Determining Factors of Housing Decisions by Low-and Middle-Income Households

The dependent variable is Z value, which means the log value of the probability of the sample group to buy houses.

Current decision

Z=1 when the sample group decided to “buy” a house (690 samples)

and Z=0 when the sample group decided to “not buy” a house (798 samples)

2.5 Field Survey and Data

To complete factors of housing decision for low- and middle-income households' analysis, it was necessary to collect primary data from the field survey (1,488 samples). The target group was low- and middle-income people who

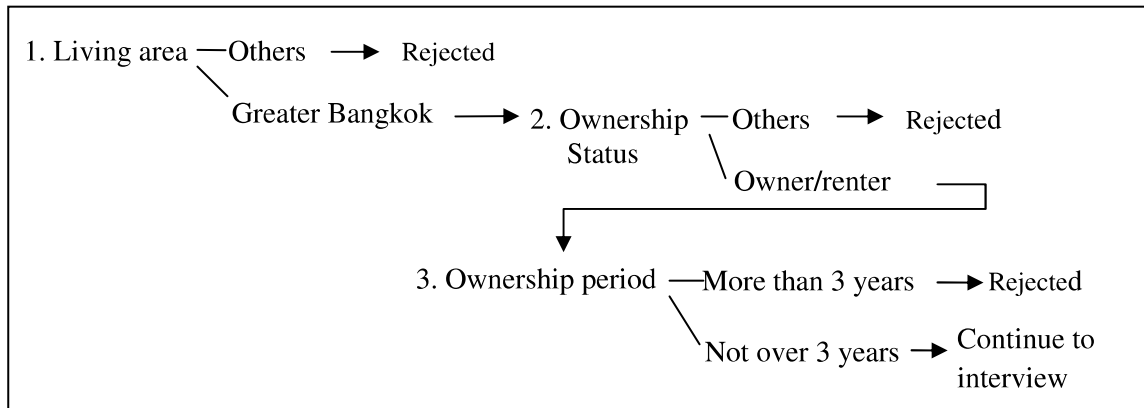
- (i) Currently live in the greater Bangkok area or
- (ii) Attended Home Buyers' Expo 2012 (August 23-26) or
- (iii) Live in public or private housing projects.

The data was collected from personal interviews, followed by a questionnaire developed by NHA and TDRI. In addition, a Binary Logit is used for analysis.

The screening target group process, as shown in Figure 2.3, began by asking about 1) living area 2) home ownership status and 3) home ownership period. The questions asked during the survey are shown in Table 2.7, and the meanings of variables' conditions are shown in Table 2.8 respectively.

Figure 2.3

Screening Process



Source: Author

Table 2.7***Variables Description***

Variables	Description	Code
1. Dependency ratio (DPR)	How many people are there in your house?	Number
2. Location (LOC) (Near the main road, workplace, school and relative and easy for commerce)	Do you think the location is important?	Importance level 5= The most important 1= Not important
3. Income (INC)	How much of your monthly family income?	Number (Baht)
4. Housing prices (HPRICE)	Do you think housing price is important?	Importance level 5= The most important 1= Not important
5. Transportation costs (TCOST)	How much do you pay for daily transportation?	Number (Baht)
6. Transportation systems (TRAN) (Public transportation, mass transit and toll way)	Do you think transportation system is important?	Importance level 5= The most important 1= Not important
7. Facilities and utilities (FAU) (Convenient store, market and hospital)	Do you think facilities and utilities are important?	Importance level 5= The most important 1= Not important
8. Social environments (SENV) (Security, neighborhood and friendship)	Do you think social environment is important?	Importance level 5= The most important 1= Not important
9. Monthly housing payments (MPAY) (Only rent and installments)	How much of your monthly rent or installments?	Number (Baht)

Source: Author's questionnaire

Table 2.8

Meanings of Variables' Conditions

Variables	Conditions	Meaning
Dependency ratio	Increase	The number of dependent person in the family increases
Location	Good	House is located near the main road, workplace, school, relative or easy for commerce
Income	Increase	Household's monthly income increases
Housing prices	Reasonable	Housing prices are reasonable when compared with household's affordability and space
Transportation costs	Increase	Daily transportation costs increase
Transportation systems	Good	House is surrounded with public transportation, rapid mass transit and toll way
Facilities and utilities	Good	House is surrounded with enough convenient store, market and hospital
Social environments	Good	House is surrounded with good security, neighborhood and friendship
Monthly housing payments	Increase	Household's monthly housing payment in terms of rent and installments increase

Source: Author's questionnaire

2.6 Results

The results of determining factors for housing decisions are separated into two parts.

1) Factors for housing decisions considered by low-income households

The initial objective of low-cost public housing (BEA) is to provide houses for low-income households. Unfortunately, BEA has been shown to be inadequate for the low-income households needs. Therefore, it is necessary to find determining factors for housing decisions considered by low-income households. This will help to resolve the unsold unit problem and encourage low-income people to own houses.

2) Factors for housing decision considered by low and middle-income households.

As mentioned, the number of low-income people is decreasing and will be very small in the future, as the amount of middle-income people increases. Focusing on only low-income households may provide the solution for the sale of all unsold units. Therefore, including middle-income households and attempting to determine factors for housing decisions considered by low- and middle-income households will help to find a solution.

2.6.1 Determining Factors of Housing Decisions by Low-Income Households

1) Households' Characteristics

Table 2.9 describes the characteristics of low-income households. A large number are male, come from the Northeast region are 34-year-old on average, unmarried, graduated from university with a bachelor's degree, and work in private companies. 30-year-old people will continue to rent in the future, while 34-year-old people consider buying houses in the near future. Aged forty and over people already own houses. The average distance from their home to work place is around 3 kilometers, and the one-way commute time is 32 minutes.

For renters, the average family size is 1.5 people; the average monthly household income is 20,000 Baht (US\$ 667) and they pay around 3,000 Baht (US\$ 100) per month in rent. Most have resided in flats or apartments in the greater Bangkok area for seven years. They use public buses and pay 60 Baht (US\$ 2) for daily transportation costs.

For buyers, the average family size is 2.6 people; the average monthly household income is 23,000 Baht (US\$ 767). Their homes cost an average of 1.3 million Baht (US\$ 43,333) and are paid for by installments of approximately 3,000 Baht (US\$ 100) per month. Most of them have stayed in detached houses or condominiums in the greater Bangkok area for 10 years. They use the sky train and pay 80 Baht (US\$ 2.6) for daily commuting cost.

For the future decision, the typical person who has a monthly income more than 21,000 Baht (US\$ 300) or was born in the greater Bangkok area would like to buy houses at 1.2 million Baht (US\$ 40,000) or pay around 2,700 Baht (US\$ 90) for monthly mortgage payments. Northeast people will keep renting and pay around 3,100 Baht (US\$ 103) for monthly rent. Northeast people may want to return and work in their home towns in the Northeast region, so they will keep renting while they are living in the greater Bangkok area. The monthly rent cost is higher than mortgage payments but not considerably different.

Table 2.9

Low-Income Households' Characteristics (on average)

Variables	All (446 households)	Current Decisions		Future Decisions	
		Rent (365 households)	Buy (81 households)	Rent (44 households)	Buy (244 households)
Average family size (person)	2.05	1.46	2.57	1.73	2.16
Average monthly income (Baht)	20,324	19,718	23,055	18,600	21,193
Hometown	Northeast	Northeast	Greater Bangkok	Northeast	Greater Bangkok
Staying period in BMR (years)	6.36	6.55	10.15	6.36	7.20
Housing type	Flat/apartment	Flat/apartment	Detached house/condo	Flat/apartment	Flat/apartment
Monthly rent/installments (Baht)	2,815	3,015	2,911	3,140	2,731
Housing prices (Baht)	-	-	1,285,000	-	1,259,918
Distance from home to work place (km)	2.86	2.84	2.96	2.89	2.88
Transportation time (one-way) (minutes)	32	32	34	40	33
Daily transportation costs (Baht)	57	53	78	70	59
Transportation vehicles	Bus	Bus	Sky train	Own motorcycle	Bus
Sex	Male	Male	Male	Male	Male
Age (years)	34	32	40	29	34
Status			Single		
Highest Education			Bachelor degree		
Occupation			Private company employee		

Source: Author's computation, 2013

2) Estimation Results

Table 2.10

Estimation Results: Renting Decision by Low-Income Households

Renting		Current decision		Future decision	
Independent variables	Conditions	Coefficient	SD.	Coefficient	SD.
Constant	-	6.536	1.164	2.037	1.372
Dependency ratio	Increase	-0.091	0.173	-0.360	0.266
Location	Good	-0.733	0.568	-0.746*	0.423
Income	Increase	-0.444	0.339	-0.691**	0.301
Housing prices	Reasonable	-0.634**	0.273	-0.050	0.397
Transportation costs	Increase	-0.007***	0.002	0.012***	0.003
Transportation systems	Good	-0.085	0.266	-0.368	0.392
Facilities and utilities	Good	-0.116	0.267	-0.684	0.435
Social environments	Good	-1.635***	0.564	-0.045	0.252
Monthly housing payment	Increase	-0.558***	0.139	-0.001***	0.000
		N=446		N=288	

Remark: *, ** and *** are significant at 10%, 5% and 1 % respectively.

Source: Author's calculations

Low-income households' renting decisions are analyzed to determine renting decision factors, in order to resolve the existing problem of unsold public units and enable low-income households to stay in stable housing.

As presented in Table 2.10, for the current decision, low-income households will decide to buy houses if their dependency ratio, income, and transportation costs increase. In the same way, if location, the transportation system, public facilities, and utilities and the social environment are good and the housing price is reasonable, they will decide to buy.

For the current decision, monthly housing payments, transportation costs and the social environment are significant at one percent, and housing price is significant at five percent.

For the future decision, most of the variables follow the same direction as the current decision, but transportation costs display the opposite trend. Monthly housing payment and transportation costs are significant at one percent; income and location are significant at five and ten percent, respectively.

If low-income households are in good economic and social environment conditions, people will decide to buy a house rather than rent.

When comparing the significant variables between the current and future renting decisions, it was found that low-income households emphasize considerations of monthly housing payments, social environment, transportation costs, and housing prices for their current decision. They will consider income and location more for the future decision. Buying houses is a large and long-term investment and needs to be considered carefully for future income and stability. Moreover, it is not easy to move or sell a house once it has been bought.

The difference in determining factors for housing decisions for low-income households between current and future decisions is the transportation costs. If current transportation costs increase, they will decide to buy a house. The reason is that their income may not increase while transportation costs increase. Therefore, they may try to find and buy a house in a good location, to reduce transportation costs. If future transportation costs increase, they will decide to rent. They may have to weigh the potential increases in transportation cost against the uncertainty of future income, resulting in a preference to rent.

2.6.2 Determining Factors of Housing Decisions by Low- and Middle-Income Households

1) Households' Characteristics

Table 2.11 presents the characteristics of low- and middle-income households. Most of the respondents are male, born in the greater Bangkok area, married, have a bachelor's degree, work in private companies and currently stay in detached houses or

apartments. More than 50% of them have a car, their average commute to work is 3.4 kilometers, and they spend 40 minutes for one-way transportation.

The average age of the renter is 36-year-old and the family size is 2.6 people. The average monthly income is 48,000 Baht (US\$ 1,600) and the rent is 3,000 Baht (US\$ 100) per month. Most of them have stayed in detached houses or apartments in the greater Bangkok area for 9 years. They use the public buses and own cars and pay around 90 Baht (US\$ 3) for daily transportation costs.

The average age of the buyers is 43 years old and the family size is 3.3 people. The average monthly income is 83,200 Baht (US\$ 2,773). They buy a house at 2 million Baht (US\$ 66,667) and pay around 3,000 Baht (US\$ 100) for monthly installments. Most of them have stayed in detached houses or town houses in the greater Bangkok area for 10 years. They use cars and pay around 130 Baht (US\$ 4) for daily transportation costs.

Table 2.11

Low- and Middle-Income Households' Characteristics (on average)

Variables	All (1,488 households)	Current decisions	
		Buy (690 households)	Rent (798 households)
Average family size (person)	2.92	3.25	2.63
Average monthly income (Baht)	63,306	83,166	47,999
Hometown	Greater Bangkok	Greater Bangkok	Greater Bangkok
Staying period in BMR (years)	9.35	9.68	8.89
Housing type	Detached house /apartment	Detached house/ Townhouse	Apartment/ Detached house
Monthly rent/installments (Baht)	4,332	5,856	3,016
Housing prices (Baht)	-	1,999,769	-
Distance from home to work place (km)	3.37	3.46	3.3
Transportation time (one-way) (minutes)	39	40	38
Daily transportation costs (Baht)	106	129	86
Transportation vehicles	Car	Car	Car/bus
Sex	Male	Male	Male
Age (years)	39	43	36
Status		Married	
Highest Education		Bachelor degree	
Occupation		Private company employee	

Source: Author's computation

2) Estimation Results

Table 2.12

Estimation Results: Buying Decisions by Low- and Middle-Income Households

Independent variables	Conditions	Coefficient	SD.	Marginal effect
Constant	-	-5.785	0.551	-0.870
Dependency ratio	Increase	0.449***	0.084	0.066
Location	Good	0.171	0.126	0.027
Income	Increase	0.600***	0.044	0.090
Housing prices	Reasonable	0.345***	0.127	0.050
Transportation costs	Increase	0.001*	0.001	0.000
Transportation systems	Good	0.222*	0.122	0.032
Facilities and utilities	Good	0.061	0.159	0.009
Social environment	Good	0.287***	0.009	0.045
Monthly housing payment	Increase	0.204***	0.036	0.031
N=1488				

Remark: *, ** and *** are significant at 10%, 5% and 1 % respectively.

Source: Author's calculations

The reasons for analyzing low- and middle-income households' buying decisions are to increase home ownership and prepare for the future.

Monthly housing payments, income, dependency ratio, housing prices, the social environment, transportation costs, and transportation system are the determining factors for the current buying decision in low- and middle-income households and significant (Table 2.12).

Having higher monthly housing payments results in more challenging affordability, but they decide to buy. When they decide to buy, they want to economize their transportation costs due to their larger monthly mortgage payments. The housing payment may consume nearly one-third of their income. Therefore, houses need to be located in a place that helps to reduce transportation costs.

Income has the highest impact or marginal effect on the buying decision at 0.09. If income increases while other factors remain equal, the chance of buying a house will

increase by around nine percent. The marginal effect of housing prices and social environment is around five percent, and location, monthly housing payments, and the transportation system are around three percent.

By considering each of the factors previously described, the policy-maker can prioritize the necessary policies accordingly. Obviously, if the government emphasizes income and monthly housing payments or provides a good transportation system and social environment surrounding the housing projects, the buying decision will be impacted by at least three percent.

3) Potential Buyer Forecast

A potential buyer forecast from questionnaire survey found that among 798 people, who are not current buyers, there were 110 potential buyers and 688 non-potential buyers. Without changes in policy and regulations, only 110 people have buying potential. Therefore, encouraging home ownership is vital to capitalize on the number of people who are currently not considering buying, but could have the future potential to do so

2.7 Conclusion and Policy Implications

2.7.1 Conclusion

This chapter has attempted to analyze the determining factors of housing decisions for low- and middle-income households in the greater Bangkok area. The hypothesis is that economic factors, the physical environment, and household characteristics are the determining factors for housing decisions. A “low-income household” has been defined as a household which has a monthly income less than 30,000 Baht (US\$ 1,000). Questionnaires were used to collect primary data (1,488 samples), and a Binary Logit model was used for analysis.

Table 2.13

Low- and Middle-Income Households' Characteristics

Variables	Low-income		Low and middle-income	
	Rent	Buy	Rent	Buy
	(365 households)	(81households)	(798 households)	(690 households)
Average family size (person)	1.46	2.57	2.63	3.25
Average monthly income (Baht)	19,718	23,055	47,999	83,166
Hometown	Northeast	Greater Bangkok	Greater Bangkok	Greater Bangkok
Staying period in BMR (years)	6.55	10.15	8.89	9.68
Housing type	Flat/apartment	Detached house/ condo	Apartment/ detached house	Detached house/ townhouse
Monthly rent/installments (Baht)	3,015	2,911	3,016	5,856
Housing prices (Baht)	-	1,285,000	-	1,999,769
Distance from home to work place (km)	2.84	2.96	3.3	3.46
Transportation time (one-way) (mins)	32	34	38	40
Daily transportation costs (Baht)	53	78	86	129
Transportation vehicles	Bus	Sky train	Car/bus	Car
Sex	Male	Male	Male	Male
Age (years)	32	40	36	43
Status		Single		Married
Highest education (level)			Bachelor	
Occupation			Private company employee	

Source: Author's summary

1) Low- and Middle-Income Households Characteristics

The households' characteristics are summarized and shown in Table 2.13. The total numbers of respondents were 1,488 households, consisting of 446 low-income households, which is the first group. The second group was composed of 1,042 middle-income households and 466 low-income households. This implies that the second group is dominated by middle-income households. Therefore, the results will be explained in terms of low-income and middle-income groups.

Low-income renter households came from the Northeast region, stayed in flats or apartments paying 3,000 Baht/month (US\$ 100) for rent, compared to other groups such as low-income buyers, middle-income renters and buyers born in the greater Bangkok area.

The middle-income renter's income is 2.4 times larger than the low-income renter's; the middle-income buyer's income is 3.4 times larger than low-income buyer. In addition, middle-income households tend to have been in the greater Bangkok area longer than low-income households. This means that while they are living in the greater Bangkok area, they have the opportunity to earn more money. Therefore, it is possible for them to buy houses in the greater Bangkok area. The middle-income households can buy houses at higher prices and pay a monthly mortgage payment around twice that of low-income buyer households.

Low-income households prefer to rent flats or apartments than to buy while paying similar amounts of rent to the mortgage payments. The average housing price is 1.3 million Baht (US\$ 43,333). Respondents pay an average amount of 3,000 Baht (US\$ 100) regardless of whether they rent or buy.

The middle-income households have similar housing decisions. For buyers, the housing price is around 2 million Baht and they pay 6,000 Baht (US\$ 200) for monthly installments. An average rent is around 3,000 Baht/month (US\$ 100). Most of the middle-

income households use cars and pay transportation costs of around 90 Baht (US\$ 3) for renters and 130 (US\$ 4) for buyers.

Typically, people aged 40 and over, who were born in the greater Bangkok area, tend to buy houses, whereas younger people prefer to rent. When income, family size or the dependent ratio increases, people prefer to buy houses. However, the housing price should not exceed 1.3 million Baht (US\$ 43,333) for low-income households and 2 million Baht (US\$ 66,667) for middle-income households. The distance from home to the workplace for both groups is around 3.5 kilometers, and they spend less than 40 minutes for one-way transportation.

2) Estimation Results

Table 2.14

Housing Decisions under Various Conditions by Income Groups

Variables	Conditions	Low-income			Low- and middle-income
		Current	Future	Tendency	Current
Dependency ratio	Increase	Buy	Buy	Buy	Buy***
Location	Good	Buy	Buy*	Buy	Buy
Income	Increase	Buy	Buy**	Buy	Buy***
Housing prices	Reasonable	Buy**	Buy	Buy	Buy***
Transportation costs	Increase	Buy***	Rent***	-	Buy*
Transportation systems	Good	Buy	Buy	Buy	Buy*
Facilities and utilities	Good	Buy	Buy	Buy	Buy
Social environments	Good	Buy***	Buy	Buy	Buy***
Monthly housing payment	Increase	Buy***	Buy***	Buy	Buy***

Remark: *, ** and *** are significant at 10%, 5% and 1 % respectively.

Source: Author's compilation

As presented in Table 2.14, both low and middle-income households decide to buy houses by considering and emphasizing the same factors. However, some middle-income

households continue renting despite their household's increased income. The most important determining factors of the current buying decision are monthly housing payments, social environment, housing prices, and transportation costs. While monthly housing payment is the most important for future buying, and transportation cost is the most important for future renting.

Increases in monthly housing payments mean that more challenging affordability is the most important factor, because it is the determining factor between current and future buying decisions. Economic factors play a crucial role for housing decisions. When housing is more affordable, people will decide to buy houses, which will help to resolve the existing problems of unsold units' and the fiscal deficit. Moreover, it will generate an economic growth cycle through increasing consumption, investment, and employment.

Low-income households place greater focus on transportation costs and monthly housing payments over income because low-income households have greater difficulty increasing their income. The appropriate solution for them to stay in the greater Bangkok area is to minimize the cost of living, especially the housing cost, which consumes around one-third of their income. If low-income households have more opportunity to earn stable increased incomes, they have increased opportunities to own homes. Low-income households can afford houses costing less than 1.3 million Baht (US\$ 43,333) and can afford to pay monthly installments of around 3,000 Baht (US\$ 1,000).

When middle-income households consider the income, transportation systems and social environment, they can buy the houses at 2 million Baht (US\$ 66,667) by paying monthly mortgage payments of around 5,800 Baht (US\$ 193).

2.7.2 Policy Implications

Before choosing housing options or policies, the government needs to identify its objectives clearly. Which is the main target group? How many households does the government want to help? If the target group is the low-income households, the government should not increase the income ceiling as was previously done. Increasing the income ceiling may help government to sell unsold units, but those units may be bought by other income groups. Therefore, the low-income people comprising the main target group will still face the problem of living in unstable housing and cannot own homes.

The government's role in resolving the existing problem of unsold units and encouraging home ownership includes:

- 1) Continually providing and maintaining the transportation systems and routes, the social environment, and facilities and utilities surrounding the housing projects in order to attract renters and buyers.

Having good transportation systems will help to solve the location problem and decrease commuting time. Moreover, it will help sub-urban land development through market and job creation. Reducing number of people who have to commute to work in the center of the city will decrease the city congestion.

- 2) Finding possible channels to increase low and middle-income households' income and affordability such as:

- (i) Saving discipline promotion. Increasing savings results in money accumulation and increases the affordability of homes.

- (ii) Providing subsidies via housing vouchers or discounts for renters and buyers.

Government has to implement each option carefully. If the government wants to reduce the fiscal cost, create sustainable housing development and promote saving towards buying

houses, the first option is appropriate. However, it may take a long time when compared with the second option. On the other hand, if the government wants people to own or rent houses immediately, the government may provide a subsidy such as voucher or discount for buyers or renters. However, the government may have to bear a huge fiscal burden if the second option is implemented.

3) Introducing possible housing options through public housing projects in terms of:

(i) Purchasing options for people who have buying potential. Both low and middle-income households wish to buy houses. The government should reconsider the housing prices for lower-income households as currently those available are not compatible with their needs.

(ii) Renting options for low and middle-income people who currently do not have the capacity to buy or are not ready to settle in one place. The government should offer some existing unsold units or buildings for rent in order to get revenue from rent and use for other purposes. However, the rental rate should be based on a household income in order to create fairness and equality.

(iii) Hire-purchase options for low- and middle-income people who wish to own houses but currently have some difficulties which make them postponing their buying decision. The government may provide a renting contract for low- and middle-income where renters have to pay monthly rent without default for a certain period. After fulfilling this payment plan, they can apply for housing credit from financial institutions and change the contract from rent to buy. This option may help low- and middle-income households own houses when they are ready to settle in the same place and community.

4) It is difficult to provide low-cost housing in the city. The low-cost houses cannot be constructed in the urban area because of the limited available land. Building New Towns will solve the problem of location by creating land developments in the sub urban areas. Therefore,

creating New Towns completed with the basic requirements will help the government sell unsold units, create jobs and reduce city congestion. Therefore, the government should research this possibility carefully.

Furthermore, the government should provide information about a housing ladder² plan to people in order to persuade and help them to have housing stability. Home ownership can be used to provide families with housing stability, better well-being, and upgraded social status. Moreover, it can be used as a credit guarantee or mortgage when the owner wants to borrow money from others or a family's economic situation worsens. On the other hand, houses can be inherited by the next generation.

² The housing ladder means a series of stages in owning houses in which you buy a small house or apartment first and then buy a larger or more expensive house when you have enough money.

Chapter 3

The Problem of Unsold Units and Elderly Housing Management: Applying the Japanese Experience to Thailand³

3.1 Ageing and Housing

3.1.1 The Ageing Society and Elderly Requirements

Most of the elderly people would like to age-in-place (Tinker, 1997; Abellan & Rojo, 1997). It means older people want to stay in the same place or have minimum changes of house, community and the environment with which they are familiar. When time passes, elderly people's health condition, such as eyes, ears and movement, grow worse. At the same time, houses that they reside in deteriorate and are not appropriate for them.

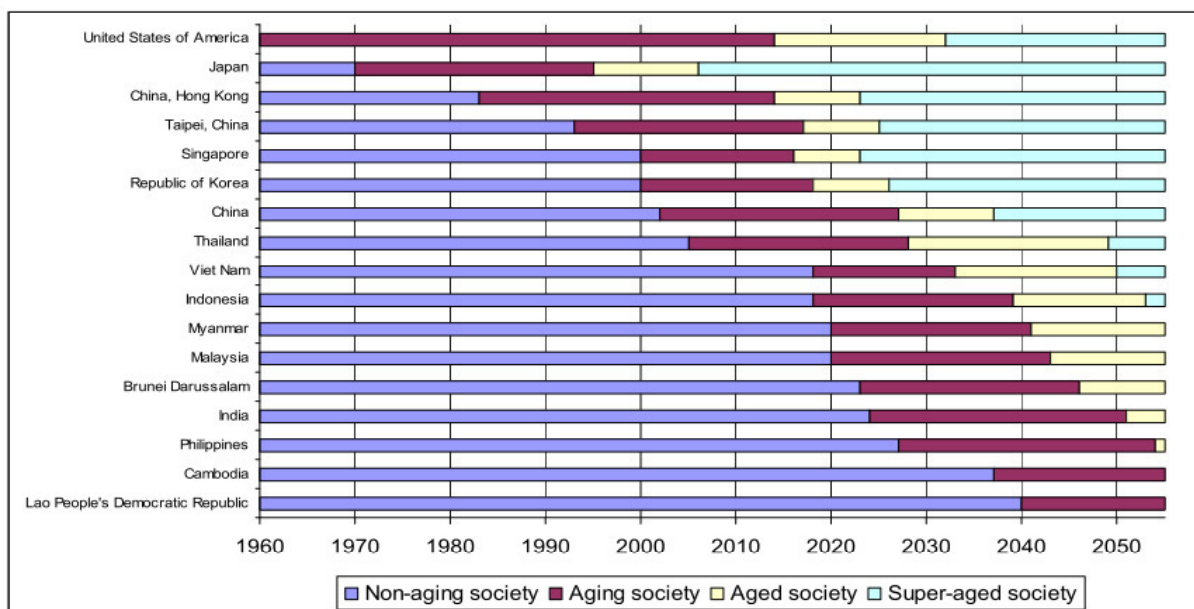
Figure 3.1 demonstrates how ageing is increasing rapidly and how it takes only a short time to become an aged society. In Asia, Japan became an ageing society⁴ in 1970 and an aged society in 1995, taking approximately 25 years to move from ageing to aged. Hong Kong became an ageing society in 1982, Taipei in 1992 and Singapore, South Korea, China and Thailand in early 2000. In 2010, 23% of people in Japan were aged 65 and over and 8.9% in Thailand. Most of the Asian countries will take around 20-25 years to reach aged society, that is, at a faster rate than Japan. Ageing transition will become a serious situation in the future (Lee et al. 2011).

³ This chapter is based on the following journal paper with revisions and additions. Phanida Roidoung. (October 2014 – March 2015). The Problem of Unsold Units and Elderly Housing Management: by Applying the Japanese Experience to Thailand. *The Japanese Studies Journal, Institute of East Asian Studies*, 31(2), 98-119.

⁴ Author adjusted the definition of "Ageing society" from the US definition (people aged 65 and over) to Thailand (people aged 60 and over). In this study "ageing society" is where the percentage of the people aged 60 and over becomes more than 7% of the total population, and an "aged society" is one with over 14%.

Figure 3.1

Years of Entry to Ageing Society, Aged Society, and Super-Aged Society



Note: Ageing society, aged society, and super-aged society refers a country in which the proportion of people aged 65 and over exceeds 7%, 14% and 20%

Sources: Calculated from United Nation (2009) and projections by the Department of Manpower Planning, Taipei

Many developed countries such as Japan face the problem of elderly housing. Although Japan became an ageing society in 1970 as previously stated, the Japanese government failed to initiate a response to the increasing needs of the aged in housing until 1986. During that time, Japan faced the serious problem of having to provide buildings and dwellings that were suitable for use by elderly people in a very short time (Satoshi, 1997). Eventually, the Japanese government overcame this problem with less of a fiscal budget. How did the Japanese government overcome the elderly housing problem and take care of elderly households?

Japan is one of the leading countries in Asia in terms of economic and social development. Thailand and Japan have different levels of physical, economic and social

development, as presented in Table 3.1. The size of Thailand is approximately 1.35 times larger than Japan in terms of land area, but Japan has higher population density. Moreover, the Japanese government has overcome poverty.

Table 3.1

Country Data in 2012

Indicators	Thailand	Japan
Size (km ²)	513,120	377,944
Population (million)	66.8	127.6
Population (growth)	1.4	0.4
Life expectancy (years)	72	83
Population density (people/km ²)	131	350
Income level country	Upper middle income	High income
GDP per capita (current US\$)	366 billion	5.916 trillion
GDP per capita (growth)	6.2	2.2
Poverty headcount ratio at national poverty line (% of the population)	13.2	-

Source: World Bank, 2012

This type of change in demography impacts the socio-economic systems, economic growth, well-being and fiscal development of a country. The change in the population leads to the change in housing requirements (Campbell et al., 1993). In Thai society, children are encouraged to take care of their elderly parents and other relatives. However, the situation is now changing. The nuclear or single family is becoming more dominant while the extended family is declining. Table 3.2 shows that in 2010, the average size of a household was 3.2 people, which was smaller than the last census in 2000 (3.8 people). From 1960 to 2010, the average size of household over time gradually decreased. The average size of a household in 2010 decreased around 0.6 percent compared with the size of a household in 1960.

Table 3.2***Number and Average Household Size from 1960-2010***

Year	Average Household Size
1960	5.6
1970	5.7
1980	5.2
1990	4.4
2000	3.8
2010	3.2

Source: NSO, 2011

Table 3.3***Life Expectancy at Birth 2010-2025***

	Year				
	2010	2020	2030	2040	2050
Life expectancy (years)					
Male	70.4	72.6	73.0	75.3	73.4
Female	77.5	79.3	74.1	81.9	83.1
Dependent* (1,000 people)					
0-14 year-old	12,642	11,082	9,801	8,169	-
60+ year-old	8,408	12,622	17,579	20,519	-
Total population	65,921	68,128	68,306	65,995	-
Elderly ratio (Share of 60+)	12.8	18.5	25.7	31.1	-
Population forecast (1,000 people)					
Bangkok	7,691.4	8,264.1	8,275.9	-	-
Vicinity	5,837.1	7,060.2	8,095.6	-	-

*Remark:** Dependent means a person who is not in the labor force who is age, not over 14 and 60 and over

Source: NESDB, 2010

Table 3.3 illustrates that the life expectancy of Thai people is anticipated to increase from 74 years in 2012 to 77 years in 2025. Furthermore, the percentage of elderly Thai is predicted to increase from 12.8 in 2010 to 31.1 in 2040 (NESDB, 2013).

According to a Thai survey of elderly households in 2007, 21% of the people aged 60 and over said their income was insufficient for daily life and 28% said they were not satisfied with their financial situation. The main income source came from their children, but this tends to decrease because of a decline in economic activity or fewer children (Knodel et al., 2011).

3.1.2 Elderly Households and Unsold Units

Ageing issue is an emerging issue in Thailand. Elderly people are not low-income at the moment, but the elderly comprise a socially valuable group in the housing market. More than 50% of them face difficulty in living in the current residence due to the risk of falling and dementia. The government expenditure on health care, especially for the elderly, tends to increase. Health care expenditure is expected increase from 2.05 percent of GDP in 2017 and increase to 2.5 percent and 3.3 percent of GDP in 2027 and 2037 respectively (Fiscal Policy Research Institute Foundation [FPRI], 2013). If the number of health problems resulting from inappropriate housing increases, this will cause greater government expenditure. The government must consider this issue seriously and prepare appropriate housing, home care and health care systems for the elderly.

Table 3.4

*Average Elderly Monthly Income per Year from 2006-2010**

	Average monthly income per year (Baht)		
	2006	2008	2010
Poverty line (Bath/person/month)	1,443	1,443	1,443
Region			
Bangkok	21,555	23,781	26,259
Central	6,398	5,694	6,198
North	2,973	3,351	4,032
Northeast	3,922	4,176	4,789
South	4,456	8,762	5,519

Note: * Survey only elderly workers in public, private and state-owned enterprises

Source: National Households Survey, NSO, 2006-2010

Results from the National Working Survey in Table 3.4 show that, the average monthly income of elderly workers in the public and private sectors and in state-owned enterprises are above the poverty line. Specifically, elderly people who reside in the Bangkok area receive the highest income.

Although elderly people are not poor, the government cannot neglect them because they are senior citizens. Moreover, they are one of the socially valuable groups similar to the low-income group. Therefore, the elderly housing market can be considered together with the low-income housing market with regards to the usage of unsold units.

Hence, the study of housing for the elderly is important for Thailand, not only to take care of the elderly today, but also prepare before the current working population reaches old age. Despite the fact that currently, elderly housing is not a serious issue for Thai society, to reduce unsold units, control fiscal costs and create an effective elderly housing management system, it is necessary for Thailand to study and apply lessons learned regarding elderly housing development and management policy from the Japanese experience. Japan has a long history of development and successful management, and can serve as a model although the respective countries have economic and social status differences. Additional details of elderly housing policy will be explained later in this study.

3.1.3 Research Objectives

The objectives of this chapter are to:

- 1) Identify the factors affecting elderly households' housing decisions
- 2) Compare and analyze Thailand's elderly housing policy with Japan's
- 3) Provide recommendations for resolving the problem of unsold units
- 4) Recommend housing options for elderly households with minimized fiscal burden.

The next part shows the statistics of population density, household size and the elderly living conditions. The relevant reference material will then be presented. Following this will be the data and methodology used in the study. Next, the housing policies for an ageing society will be provided. The results from the analyses of housing decision will then be presented. Finally, the conclusion and policy implications are presented.

3.2 Facts and Research Questions

3.2.1 Household Size and Population Density

Thai people delay marrying and the average child per family is less than two. Comparing by areas, the average size of a household in a non-municipal area was 3.4 people, which was larger than in the municipal area (3.0 urban). Considering the size of household across regions, it was found that the South and the Northeast had the largest average size of household (3.5 people), follow by the North (3.1 people), and the Central (3.0 people). Bangkok had the smallest average household size at 2.9 people. (Table 3.5)

Table 3.5

Average Household Size by Region and Area in 2000 and 2010

Region and area	Average household size	
	2000	2010
Kingdom	3.8	3.2
Municipal	3.5	3.0
Non-municipal	3.9	3.4
Region		
Bangkok	3.6	2.9
Central	3.6	3.0
North	3.5	3.2
Northeast	4.1	3.5
South	4.0	3.5

Source: NSO, 2011

The population density of Thailand in the year 2010 was 127.6 people per square kilometer, which was higher than in 2000 (118.7 people per one square kilometer). At the regional level, the population density in descending order was as follows: Bangkok (5,258.6), the Central (117.3), the Southern (125.0), the Northeast (111.4), and the North (6.74). The population density in Bangkok is increasing gradually. In 2010, the population density in Bangkok had increased around 1.3% from that in 2000. (Table 3.6)

Table 3.6

Population Density by Regions in 2000 and 2010

Region	Population density*	
	2000	2010
Whole Kingdom	118.7	127.6
Region		
Bangkok	4,051.2	5,258.6
Central	138.9	177.3
North	67.4	67.4
Northeast	123.3	111.4
South	114.4	125.0

Note: * population per square kilometer

Source: NSO, 2011

3.2.2 Home Ownership

Most developed and developing countries encourage home ownership. For instance, as of 2012, the Korean home ownership rate was more than 50%, while Japan was 61%, Singapore 71%, and Thailand 80% (World Bank, 2012). Home ownership is a source of happiness and important for a country's development because it can be used for a family's living security, as asset accumulation, loan collateral and inheritance for the following generation (Roberts, 2012).

Living quarters were classified into two groups, private housing and collective living quarters. On September 1, 2010, Thailand had 99.4% private dwellings and only 0.6 percent

collective dwellings, which includes workers' camps, institutions and hotels. Thai people wish to buy a house before getting old. Having their own house, especially a detached house, is a source of happiness and demonstrates their well-being and status (NSO, 2010)

3.2.3 Elderly Living Conditions

In advanced countries, around 80% of elderly people live in urban areas. By 2050, approximately a quarter of the urban population in less developed countries is expected to be over 60 years old (The United Nations Population Fund [UNFPA], 2007). The aged population of Thailand is increasing rapidly in terms of number of people and percentage. The Thai government accordingly has started to carry out a campaign on family planning to increase the birth rate and to pay more attention to protecting the rights of the aged population and enhance their welfare.

With this policy, the Thai government established laws and regulations regarding building facilities to provide for disabled and aged people. The regulation includes design standards and regulations such as ramps, lifts, doors and toilets. Meanwhile, guidelines of universal design for the aged, disabled, children and pregnant woman were developed in 2009, which established the policy and direction of urban design, architectural design, interior design and landscape architecture in the future. Based on the guidelines, the government is now considering the implementation of universal design concepts for both new and existing buildings. The necessary step toward implementation of universal design would be to develop a prototype house using the universal design concept (NHA, 2013).

Traditional practice in Thai society has been for children to look after elderly parents in their family house. A large number of elderly Thai households are not prepared to live separately from their children in old age. Therefore, they are not prepared to face the hardship of housing

maintenance and repair of their deteriorating older houses. Elderly Thai households need assistance in planning for life after retirement and coping with housing problems.

Table 3.7

<i>Housing Types of Elderly Thai Household in 2012 (percent)</i>			
Housing types	Total	Urban	Rural
Normal detached house	42.4	24.8	50.3
Detached house with basement	46.0	44.0	46.9
Townhouse	4.0	9.8	1.3
Row house	7.0	20.0	1.1
Others	0.7	1.4	0.4
Total	100	100	100

Source: NSO, 2012

Table 3.7 illustrates that most of the elderly Thai people stay in inappropriate houses which are not suitable for their daily life. More than 88% of elderly people stay in detached houses comprising of normal detached houses (46%) and detached houses with basements (42%). Most houses in rural areas are detached houses with basements. Therefore, more than 50% of rural elderly people stay in detached houses with basements which are inherently dangerous for elderly living. Around 97% of rural elderly people stay in the detached houses because the land prices in the rural areas are cheap. However, a detached house in a rural area does not imply that the household is wealthy. A detached house in the rural area may be constructed from thatching, whereas a detached house in the city may be built from old wood and located in slums. Therefore, any consideration of elderly Thai homes requires a more in-depth investigation of each elderly household's status (Ngamyan & Phaophu, 2012).

3.2.4 Research Questions

This study intends to assert that elderly households can help to solve the problem of unsold public housing units which were originally produced for low-income households. Research questions which will be discussed in this chapter are:

- 1) What are the factors affecting elderly households' housing decisions?
- 2) How can elderly households help to solve the problem of existing unsold units?
- 3) What kind of elderly housing policy should be implemented in Thailand to create sustainable housing development?
- 4) What kind of government intervention is necessary in the elderly housing market?

3.2.5 Assumptions

Assumptions of this chapter are:

- 1) The questionnaires provide many important factors
- 2) Respondents understand and judge the importance level (5 levels) as equally spaced options

Five importance levels can be translated to numeric levels as:

Level 5 = The most important

Level 4 = Very important

Level 3 = Important

Level 2 = Less important

Level 1 = Not important

3.3 Literature Review

There is little research focused on elderly housing policy and management in Thailand because it is a newly ageing society. It became an ageing society in 2005 and remains in the beginning stages.

Most of research focuses on the study of providing appropriate housing for elderly households, whereas few studies concentrate on housing decisions after retirement and do not focus on separating the sample group by renters and buyers. Most of the studies use

questionnaires with descending order and report the most important factors of housing preference considered by elderly households.

Elderly people have physical problems, for instance they suffer from astigmatism, dementia, have more difficulty moving things and climbing stairs. Moreover, falling is the primary problem that the elderly face (Murphy et al., 2002; Rupkhamdee et al., 2007).

Suwansenee (2003) conducted research on elderly housing perception in public foster homes and private home care by collecting questionnaires from members of the elderly club in Bangkok. The result showed that the appropriate house should be a private single room with toilet, refrigerator, and television. In addition, it should have around-the-clock care, common leisure rooms, convenient stores and adequate parking according to Yordphet (2001).

The homecare should be located in Bangkok or other large cities. In addition, it has to be located near hospitals. Most of the elderly people prefer to stay in private homecare than public homecare despite the more expensive costs of services. They believe the services provided and the quality of private homecare is better than public homecare, and private homecare provides services in a shorter time. In addition, the elderly people suggested government should encourage home ownership by giving income tax reductions for people who buy houses.

Kim et al. (2003) studied the retirement home preference in South Korea by interviewing high-income households who are age 45 and over. The result showed that location is the most important factor in housing preference. The retirement home should not far from Seoul, which has a good transportation systems, environment, and easy access to hospitals, public space, facilities and convenient places according to Jaruthat et al., (2007). Elderly home care should be located near service centers or near the people's previous home.

Gilber (1989), Tinker (1997) and Iwarsson & Wilson (2006) suggested it was necessary to renovate current residences for elderly living. The house should be elder-friendly, especially

physical safety features such as adequate lighting, installed handrails, removal of steps and curves and use of non-slip toilet floor tile. Fobker & Grotz (2006) researched elderly housing in Germany and suggested environment safety features in terms of physical, social and communities are the most important factors of elderly houses.

In addition, Buasri et al. (2005) conducted research on innovative retirement housing in Thailand by interviewing pre-retirees from universities in Bangkok and Chonburi. The results showed that the universal designed single family detached house⁵ was the most preferable, followed by continuing care retirement housing⁶.

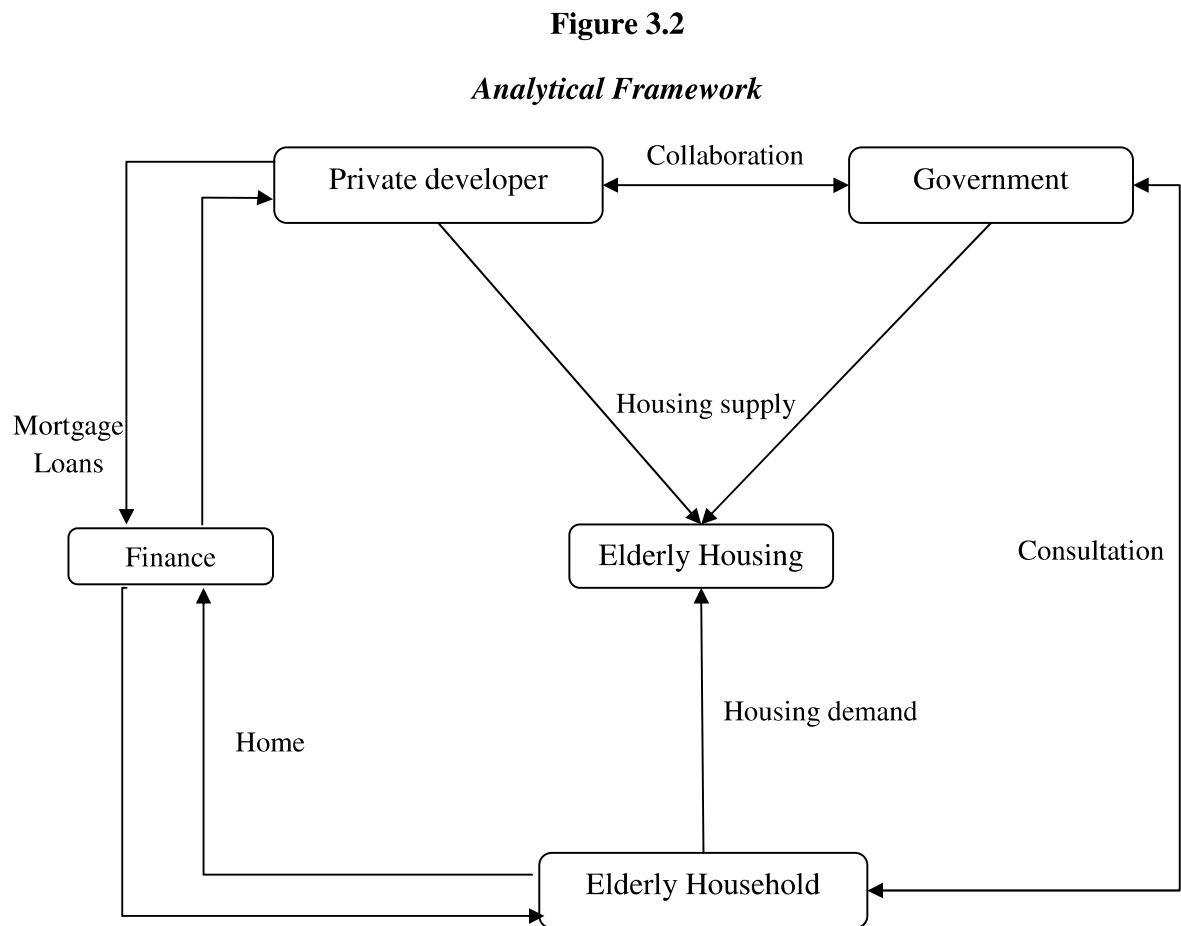
In this chapter, the rationale behind both elderly renter and buyer housing decisions are considered. This is followed by a discussion of elderly housing policies toward resolving the unsold units' issue. The study results will have benefits for reducing the fiscal burden and enhancing the well-being of elderly households.

⁵ Universal design is a concept that reestablished one of the most important goals of good design; namely, that it should meet the needs of as many users as possible. Universal design is an approach to design that recognizes and accommodates the ordinary changes people experience over their life span. The formal definition states that “universal design of products and environments to be usable by all people, to the greatest possible, without the need of adaptation or specializes design” (Center for Universal Design, 1997, 1).

⁶ The continuing care retirement community (CCRC) provides a continuum of housing options to accommodate changing needs as people age. Most CCRCs incorporate independent living, collective housing, assisted living, and skilled nursing within the same complex. Typically, residents pay an entrance fee plus monthly charges (Golant, 2002).

3.4 Methodology and Data

3.4.1 Analytical Framework



Source: Author

Government and the private sector provide housing for elderly households in the form of houses, homecare and healthcare service centers. Government also provides the consultation on elderly housing problems and home remodeling to the elderly and their children. On the other hand, the private sector provides mortgage loans to elderly people who are homeowners but have limited liquid assets. Elderly households may use cash for daily life and investments as they wish after retirement. Furthermore, government tries to reduce the fiscal burden by increasing private

sector participation in the elderly housing market. The private sector often has more expertise and can exercise better management than the government. Therefore, increasing private sector participation is one of the channels to create elderly housing market development.

3.4.2 Methodology and Model

A model was developed using primary data from the surveys received and by conducting statistical analyses of the different groups. In this study, renter and buyer households were evaluated in terms of the importance of the following housing prices, rental rate, location, construction materials quality, security systems, housing type, transportation systems, utilities, facilities, pollution, social environment, credit, and public space and parks. Therefore, the analysis will use simple mean comparison in terms of T-test (Equation 3.1) and Chi-Square test (Equation 3.3). However, in order to find the impact of each factor or compare the means of more than two groups, it is better to compare means using regression analysis. This is not the focus of the current study.

1) Hypothesis

$$\begin{aligned} H_0: \mu_{\text{renters}} &= \mu_{\text{buyers}} && \text{the two population means are equal} \\ H_1: \mu_{\text{renters}} &\neq \mu_{\text{buyers}} && \text{the two population means are not equal} \end{aligned}$$

2) T-Statistic

The test statistic for an independent Sample t -test is denoted as t , which is calculated using the following formula assuming equal variances.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \sim t (n_1 + n_2 - 2) \quad [3.1]$$

Where

$$S_p = \sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}} \quad [3.2]$$

Where

\bar{x}_1 = Mean of Renters

\bar{x}_2 = Mean of Buyers

n_1 = Sample size of Renter

n_2 = Sample size of Buyer

S_1 = Standard deviation of Renter

S_2 = Standard deviation of Buyer

S_p = Pooled standard deviation

3) Chi-Square Test

$$\frac{\sum(O_{ij} - E_{ij})^2}{E_{ij}} \sim \chi^2 (m_1 - 1)(m_2 - 1) \quad [3.3]$$

Where

χ^2 = Chi-Square

m_1 = Category number in rows

m_2 = Category number in columns

O = The observed values, and

E = The expected values

3.4.3 Data

To complete the analysis, it was necessary to collect secondary data from government research documents and related research and primary data from a field survey.

1) Primary Data

Primary data was collected by purposive sampling from an in-depth interview, followed by a questionnaire which was guided by NHA and TDRI. Refer to Table 3.8 for questions asked during the survey. The target group of the field survey was 80 people aged 60 and over, who live in the greater Bangkok area and attended Home Buyers Expo 2013. Elderly people who attending the housing fair imply they are interested in houses and are considering buying housing.

Table 3.8***Variables Descriptions***

Variables	Description	Code
1.Housing prices/rental rates	Do you think housing prices/rental rates are important?	<u>Importance level</u> 5= The most important 4= Very important 3= Important 2= Less important 1= Not important
2.Location (Near a main road, relatively easy for commerce)	Do you think the location is important?	
3.Construction materials quality	Do you think construction materials quality is important?	
4.Security systems (guard and CCTV)	Do you think security systems are important?	
5.Housing type	Do you think housing type is important?	
6.Transportation systems (Toll way, mass transit and public transportation)	Do you think transportation systems are important?	
7.Utilities and facilities (Convenience stores, markets, hospitals and government service centers)	Do you think utilities and facilities are important?	
8.Pollution (Air, water, noise and garbage)	Do you think pollution is important?	
9.Social environments (Security, neighbor and friendship)	Do you think social environments are important?	
10.Credit (Down payment and installments conditions, interest rate and credit limit)	Do you think credit is important?	
11.Infrastructure (Public space and park)	Do you think infrastructure important?	

Source: Author's questionnaire

2) Secondary Data

This study gathered secondary data from additional sources such as journals, pamphlets, websites, academic papers and related research from government agencies (NESDB, NSO, MOF), State Owned Enterprises (NHA, GHB and GSB) and international study reports such as World Bank, Asian Development Bank and United Nations in order to further understand the housing elderly situation and elderly housing policies

3.4.2 Data Analysis

After collecting data, the validity and the completeness of the answers were edited before analysis. The overall sample size was 80 questionnaires. The Statistical Package for Social Science (SPSS) was used for computation of statistics in terms of Compare Means (t-test and Chi-square test) to identify the differences in the mean scores of renter and buyer elderly households given the same mean (important) score of each factor by using the importance level and descriptive analysis regarding the elderly housing policies.

3.5 Elderly Housing Policy

3.5.1 Thailand

When Thailand became an ageing society in 2005, the Thai government still did not have many elderly housing policies. However, the government has started to focus on the Old-Age Security systems in terms of pension, private sector provident funds and retirement mutual funds systems.

The central government of Thailand emphasizes old age financial security coverage, self-preparation and the Elderly Fund. At the local level, a crucial program for elderly people is the Tambon Administration Office (TAO), which is primarily interested in elderly health care and provides medical services such as regular medical checks and consultation (TGRI, 2012).

There are not many houses specifically developed for the elderly in Thailand, but the government and private entrepreneurs are currently involved in the following systems:

- **Foster homes:** The Department of Social Development and Welfare (DSDW) provides 12 elderly foster homes in 12 provinces. They can take care of 1,600 elderly people (DSDW, 2010). In addition, TAO also provides elderly foster homes in 13 provinces. They can take care of 1,100 elderly people. The objective is to take care of elderly who have been abandoned, have low incomes or cannot stay with family members. The unit cost of taking care of elderly people in a foster home is 23,456 Baht per year. Therefore, the government has to allocate around 64 million Baht per year to take care of elderly people in foster homes.

- NHA operates **Elderly Home Remodeling**. It assists low-income elderly households or handicapped elderly households as NHA's social activity. Most of the target group stay in unstable housing such as decrepit wooden houses, with poor air circulation and old zinc or canvas roofs. The main functions performed are changing cesspool latrines to toilets, installing handrails and smooth basement adjustments. Since 2010, NHA has constructed and improved housing for 20 low-income elderly households.

- **Sawangkanives** is a condominium complex operated by the Thai Red Cross. There are full facilities, such as a therapeutic swimming pool, an exercise rooms, park, a library, a treatment room, and a nurse unit. However, the right to live there cannot be inherited. This condominium was launched for Thai citizens aged 55 years and over only.

- **Hospi-house Bang-Sai** in Ayutthaya is a group home for the elderly operated by private developers. The project is fully equipped with health services, facilities and infrastructure for the elderly.

However, there is insufficient public housing for Thailand's elderly population because private senior citizens homes are too expensive. The target of retirement homecare is high-

income elderly. Therefore, the government has to help people to prepare for old age, especially in finance and housing.

3.5.2 Japan

During the bubble economy period and the prolonged economic recession that followed the bubble bursting, it was very difficult for Japanese people to own houses. However, they continued to wish to own a house in order to secure their livelihoods to old age (Miyake, 1995; MLIT, 2008). In 2012, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) reformed the rental housing system for older people by emphasizing rental housing that meets older tenants' needs, such as being barrier-free. However, the rental housing for older people has been established and managed by private sector organization (Institute of Elderly Housing Sciences, 2013).

Elderly Japanese people are on average not poor compared with the working generation. They generally have sizable financial assets. The government takes care of the basic services and social insurance and privatizes other services as much as possible in order to reduce government expenditure (Yashiro, 1997).

The Japanese government has good management systems for elderly housing, such as providing rental housing for the elderly and health education prior to retirement. Most elderly people live in flats or condominiums with medical services or near a medical center. They often attend social activities such as hiking in order to exercise, maintain good health and socialize with friends of the same age.

In terms of health care centers, older people always apply for medical insurance and have their health regularly checked. At the same time, the government and the private sector also provide homecare, hospital care and long-term care services in general housing for disabled elderly. Therefore, elderly Japanese can live by themselves with full basic facilities.

Taking care of the older residents requires a huge budget, especially since Japan became an aged society in 1995. Therefore, the Japanese government tried to change from a “welfare state” to a “welfare society” in order to reduce the government’s expenditure. The government assists family members and society to take care of each other, especially the elderly. This increases community participation and fosters family and social relationships, which help to reduce the government expenditure (Hirayama, 2009).

MLIT cooperates with the Ministry of Health, Labor and Welfare (MHWL) and designs policies which focus on:

- Establishment of targets for the supply of rental housing and homes for the elderly
- Promotion of the supply of rental housing and homes for the elderly, and
- Provision of residential support systems for the elderly

The government system consists of Owner Occupied Housing and Rental Housing which are summarized as:

The public rental housing rate will be changed in proportion to the elderly household income. The household income ceiling will screen the neediest household to stay in public rental housing.

- Public Housing and Loans for Cohabitation and Living Nearby

In 1964, the Japanese government built public housing for low and middle-income people, allocated some units for rent, and reserved the first and second floors for the elderly. In addition, since 1972, the government, through the Housing Finance Corporation, provides loans for people who want to remodel or extend houses in order to live with their elderly relatives or live nearby (Taishaku, 1998).

- Japanese Retirement Homes, “**Silver Housing**”, was established in 1987 and is operated by local government and Urban Residence (UR). They are public rental housing for single people

over sixty, elderly couples where one or both members are over sixty, and disabled single people. The houses were designed especially to support elder needs such with features such as handrails, curb elimination and emergency call systems, and the staffs of these houses provide regular health consultation. The rental rate varies depending on housing space, facilities and services (Foundation for Senior Citizens' Housing, 2013).

- **“Senior House”** is elderly rental housing which is built considering the elder's lifestyle and life support facilities and services. The Japanese government introduced the Senior House in October 2013. The objectives are to provide elderly life improvement and security and reduce the burden on public care insurance. Both the government and the private sector run senior houses (Kamada, 2013).

- **“Superior Rental Housing for the Elderly”** is constructed to support low-income elderly residents. This program provides private remodeling and construction of rental housing with low-cost rent for the elderly. Private housing developers can receive construction costs and rent subsidies from the government.

- **“House Remodeling Consultation”** Since 1993, MTIL and MHLW have worked as a home remodeling consultant group. The consulting group aims to help elderly live in their own homes. The group visits each elderly house and advises about house remodeling taking into account individual physical conditions.

- Providing **“Reverse Mortgages”⁷** for the elderly. The Ministry of Health, Labor and Welfare began providing reverse mortgages to elderly homeowners with low incomes in 2002. In addition, private banks and housing corporations began to operate reverse mortgage schemes in the early 2000s. Reverse Mortgage schemes are based on the assumption that many older people are ‘asset-rich and cash-poor’ (Izuhara, 2007; Yamada, 2007). Mizuho was the first mega-

⁷ Reverse mortgage means the homeowner can borrow money against the value of the home, no repayment of the mortgage is required until the borrower dies or the home is sold.

bank to handle reverse mortgages. Sumitomo Mitsui Trust Bank and Tokyo Star Bank are among lenders already providing similar services. During the contract period, a Mizuho representative will visit a borrower at least once a year to check on his/her living conditions and loan collateral value. After the borrowers die, Mizuho Trust & Banking Co., Ltd will take care of the inheritance and disposal of the collateral land. Reverse Mortgage conditions are summarized in Table 3.9.

Table 3.9

Japanese Reverse Mortgage Loans

Provider	Eligibility of Borrower	Loan Conditions
Public and Private sector	<ul style="list-style-type: none"> • Must be over 55 years old • Property must owned entirely or nearly by the borrower or both the borrower and a partner. • Must get approval from all presumed heirs. • Occupy the house as their principal residence into the future. • Owns a property having more than ¥40 million assessed value. 	<ul style="list-style-type: none"> • Target of mortgage is land and building. • Maximum amount of mortgage is around 70% of assessed value. • Lower interest rate, either 3% or a long-term prime rate adopted by financing agencies • No mortgage principal in lump sum • Amount of monthly payment is decided individually.

Source: NHA, 2013 and Mizuho Bank, 2014

3.5.3 Summary Comparisons of the Elderly Housing Policies

Table 3.10

Elderly Housing Policies

Topics	Thailand	Japan
Agency	Private sector plays a crucial role to take care of elderly housing. The main target is high-income elderly people.	Government and private sector coordinate to build and improve houses for elderly and enhance community participation to look after elderly people.
Objective(s)	Protecting rights of the aged population and enhancing their welfare	<ul style="list-style-type: none"> • Supply and promote rental housing for the elderly • Enact laws and regulations to support housing for the elderly.
Housing options and operations	<p>Government sector</p> <ul style="list-style-type: none"> • Public housing: Foster home • Home remodeling: Elderly Home Remodeling <p>Private sector</p> <ul style="list-style-type: none"> • Home care: Sawangkanives and Hospi-House Bang-Sai 	<p>Government sector</p> <ul style="list-style-type: none"> • Public housing for renting and selling • Rental public home care: Silver Housing • Home remodel consultation <p>Public and private sector</p> <ul style="list-style-type: none"> • Rental housing: Senior House <p>Private sector</p> <ul style="list-style-type: none"> • Low-income elderly rental housing: Superior Rental Housing
Finance	N/A	Home remodeling loans Reverse Mortgage loans

Source: Author's summary, 2014

As presented in Table 3.10, in Thailand, the private sector plays the most important role in elderly housing. The target group of the private sector is high-income households. The Thai government takes care of elderly households by providing foster houses, which are insufficient, and remodeling the some elderly households homes. Moreover, elderly people do not feel comfortable living in their current houses because of their health conditions and the housing facilities (TGRI, 2002).

On the other hand, both the Japanese government and the private sector cooperate and try to overcome the elderly housing problem in terms of offering houses both to sell and to rent, and

providing home care to elderly households in order to take care of elderly people and creating a sustainable society, in contrast with Thailand. The renting and buying rates vary depending on housing space, facilities, and services. That means low-income elderly can rent public housing, while medium- or high-income elderly households can rent or buy houses with full facilities, utilities and health care services.

In addition, the Japanese Government offers the housing finance option to elderly households in terms of the Home Remodeling loans for the elderly or children who want to remodel houses to accommodate the lifestyle of the elderly. Moreover, the government offers the Reverse Mortgage loans to the elderly people who are home owners but have limited income.

3.5.4 Implications for Housing Policies in Ageing Society

In addition to house remodeling loans, the Japanese government reserves the first and second floors of public housing for the elderly. This helps to create good relationships and participation among generations.

The Thai government currently has to bear a huge fiscal cost from existing unsold units and buy-back of previous sold units due to buyers' default. Elderly housing will become a serious issue in the future for Thailand if the government does not become concerned and make preparations. Currently, many houses are inadequate for their ageing residents. Moreover, the main income of most elderly households comes from their children, which is insufficient for daily life. In addition, the income from their children tends to decrease because they have fewer children. Unless action is taken soon, the problems of elderly housing will become a much larger problem.

Therefore, preparing well and exercising good management for elderly housing will benefit elderly households and the government budget. Offering public rental housing or selling houses to elderly households may be a possible option to reduce the number of unsold units.

In the on-going projects, NHA needs to include elder-friendly living features such as handrails for stairs in the hallways leading to the rooms, ramps, shallower stair and curb cuts, and elimination of stairs from the street to the flat. The government has to pay more attention to the safety of the social environment.

Furthermore, the government must continue to invest in a good transportation system. If the transportation systems are well managed, it will help to eliminate the problem of location. Moreover, the land around the housing project will be developed and that will attract private sector investment. Land and business development will help to decrease crime and protect people from criminals. Moreover, it may be good for business creation and employment. People who live in the project would not necessary to commute to the city to find work, which would decrease urban congestion.

Government should invite the private sector to take care of elderly housing or business development within and around housing projects. The private sector has expertise and is better managed than the public sector. Therefore, involving the private sector and creating efficient management will be beneficial for the government budget.

Reverse Mortgage loans are good for elderly people who own homes but have little cash. Although the home ownership rate in the greater Bangkok area has decreased to around 50%, in other regions the ownership rate is still high, around 70-90% (NSO, 2010). Therefore, providing reverse mortgage loans to the elderly will be a possible option to take care of elderly who may have financial problems.

Reverse Mortgages provide benefits in terms of helping elderly households stay in their home and have cash to use for living expenses, home repairs, deposits for elderly care facilities, and medical and nursing care costs. In addition, Reverse Mortgage also benefits the real estate

market because of more liquidity. However, the house should be in a good location and have a high return value.

On the other hand, Reverse Mortgages are detrimental to the children. For instance, children may be disappointed that the elderly consume part of the home equity instead of passing the asset on as a bequest. However, the decline in the Thai population implies that households will have fewer children, so it will be easier for elderly to release their home equity for consumption.

Establishing the Reverse Mortgage in Thailand will not be overly easy. The government has to pass new laws and regulations and coordinate with financial institutions, which takes time but will be necessary. A strong financial infrastructure is required to ensure the success of these products, including safeguards for borrowers against dishonest lenders, insurance to protect against inherently risky contracts, and secondary markets for the Reverse Mortgages.

3.6 Factors of Housing Decisions

3.6.1 Results

The survey was conducted with 80 elderly people, with four of the 80 considered as low-income elderly. Of the 80, 50 were buyers and 30 were renters. Most of them reside in detached houses an average of 3.24 kilometers away from their frequently-visited area. The average household size was four people, with an average of three in the labor force. Around 70% of renters and 40% of buyers were business owners. The average monthly incomes of renter and buyer households were 136,570 Baht (US\$ 4,553) and 98,100 Baht (US\$ 3,270), respectively. (Table 3.11)

Table 3.11***Respondent Information***

	Renter	Buyer	Total
Subjects	30	50	80
Head of household (%)	100	100	100
Average age (years)	63.2	63.5	63.5
Average family size (people)	4.60	3.48	4.03
Labor force (people)	3.43	2.76	3.01
Stay in Bangkok (%)	80	78	78
Period of stay in current residence (years)	18.4	17.2	17.7
Stay in detached house (%)	53	52	53
Business owner (%)	70	40	51
Average monthly income (Baht)	136,570	98,100	112,526
Own car (%)	47	70	66
Average transportation costs (Baht/day)	91	128	114
Average transportation time (one-way) (minute)	44	37	40
Distance from home to frequently visiting area (km.)	3.20	3.26	3.24

Source: Author's questionnaire

Respondents were categorized as buyers and renters. According to Table 3.12, using the *t*-test, renters had a higher mean score than buyers on housing prices/rental rates with a significant difference ($p < 0.01$). Renters have a higher mean score on rental rate than buyers because 70% of renters are business owners. They do not want to split a lot of their business benefit or profit for paying rent. Therefore, the rental rate should be reasonable. There was no difference in mean scores of utilities and facilities with significance ($P < 0.05$), security systems and credit.

Checking robustness by using the Chi-square test of each factor is shown in Table 3.12. There is a relationship between buyers and renters and housing prices/rental rates when there is no relation between buyers, renters and other factors. Hence, the result of Chi-square supports the finding.

Table 3.12***Factors Affecting Housing Decisions***

Factors	Average Score			T-test	χ^2-test
	Total (80)	Rent (30)	Buy (50)		
1.Housing prices/rental rates	4.64	4.80	4.54	2.435**	9.450*
2.Location (Near the main road and relative and easy for commerce)	4.51	4.50	4.52	-0.145	0.599
3.Construction materials quality	4.48	4.37	4.54	-1.183	2.478
4.Security systems (guard and CCTV)	4.43	4.43	4.42	0.086	0.015
5.Housing type	4.34	4.50	4.24	1.600	2.654
6.Transportation systems (Toll way, mass transit and public transportation)	4.33	4.40	4.28	0.879	1.396
7.Utilities and facilities (Convenience store, market, hospital and government service center)	4.24	4.40	4.14	1.725*	3.311
8.Pollution (Air, water, noise and garbage)	4.16	4.33	4.06	1.403	4.134
9.Social environments (Security, neighbor and friendship)	4.14	4.20	4.10	0.610	4.980
10.Credits (Down payment and installments conditions, interest rate and credit limit)	4.10	4.10	4.10	0.000	7.609
11.Infrastructures (Public spaces and parks)	3.88	3.77	3.94	-0.936	2.866
Average Score	4.30	4.35	4.26		

Remark: 5 = the most important and 1= not important

** and * = Significant at 5% and 10% respectively

Source: Author's questionnaire

Renters gave 4.2 points which are more than buyers (4.1 points) to the social environment. Social environment means security, neighbors and friendship. Renters consider the social environment because they have freedom to choose, especially regarding security and neighbors. If the social environment around the house is not good, they will not rent. In addition, the price of housing in a very good environment may be high. If people have a limited budget and want to buy a house, they may not have many choices to choose the social environment for their house. It means typically high-income people will reside in high price housing and will have security whereas the normal price house may have less. Therefore, many buyers buy the houses with an acceptable social environment.

Using *t*-test as presented in Table 3.12, most of renters and buyers had the same average mean score on location (4.51 points), construction materials quality (4.48 points), security systems (4.43 points), housing type (4.34 points), transportation systems (4.33 points), utilities and facilities (4.24 points), pollution (4.16 points), credit (4.10 points), and infrastructure (3.88 points).

Both buyers and renters emphasized the importance of location, corresponding with the results of Yordphet (2001), Kim et al. (2003), Suwansenee (2003) and Jaruthat et al. (2007). The average importance score of location of renters is 4.50 points and buyers are 4.52 points (Table 3.12). A good location means the residence is located near main road or close to the resident's relatives and is easy for commerce.

Location and transportation systems apparently cannot be separated. Full or adequate and good transportation systems in terms of toll way, mass transit and public transportation will help to solve the location problem. People do not need to live in the city. It will benefit urban planning and suburban land development.

Table 3.11 shows that around 70% of buyers and 47% of renters have their own cars. Most of them use their own car to commute from home to the workplace because they are business owners, and go to other facilities places. Therefore, they have to go to the city every day for doing business. Buyers pay the average transportation costs around 128 Baht (US\$ 4) per day and spend around 37 minutes one-way. It implies buyers buy houses outside the city and use the expressway for commuting.

Around 47% of renters have own car for their commutes and 13% of renters use buses to commute from home to the workplace mostly every day, because 70% of renters are business owners. They spend around 44 minutes for transportation and pay around 91 Baht (US\$ 3) for daily transportation costs.

Therefore, location is a leading factor for housing decisions, but this will be satisfied if location and transportation systems are developed together. Spending 40 minutes from home to the workplace is a reasonable time. In the greater Bangkok, the area is very crowded and has many traffic jams. Many people spend more than three hours per day on the road. Therefore, if people find houses in a good location, it will help to reduce transportation time and cost.

The construction materials quality is the second important factor for housing decision considered by renters and buyers. As mentioned, the home is the source of happiness and the most relaxing place to live. People want to live in secure houses. Therefore, houses should be constructed with a good or standard quality of construction materials.

There were no differences in the mean scores of security systems and credit. The respondents stay in the greater Bangkok area, which is the most crowded area in Thailand. Many workers, both Thai people and foreigners, work in that area. When many people stay together, it is not possible to avoid social problems, especially crime. It happens in the greater Bangkok area almost every day. Therefore, most of the people want to find safe places to live. According to the survey (Table 3.11), around 53% of renters and buyers stay in the detached houses in villages that have good security systems in terms of guards, patrols or Closed-circuit television (CCTV). In addition, they said they are willing to pay more rent for a better security system.

As presented in Table 3.11 and the survey, the average household size for renters is 4.6 people and 3.48 people for buyers. If the housing loan conditions in terms of down payment and installments, interest rates and credit limits are good, they can apply for a housing loan to buy a new house. Although elderly people cannot apply for the whole amount of a housing loan, they can apply for housing syndicate loan.

Renters and buyers had the same average mean score of utilities and facilities in terms of the convenience store, market, hospital and government service center with a significant

difference ($p < 0.01$) (Table 3.12). However, the average score of renters (4.4 points) is higher than buyers (4.14 points). Both groups want to stay in houses with neighborhood having full utilities and facilities, especially convenience stores, and markets. It is very convenient for their daily life and does not require encountering with serious traffic jams. Buyers always buy houses outside the city and most of them, around 70%, have their own car. Therefore, they will drive the car to go wherever they want.

Renters and buyers do not pay much attention to public space and parks (3.38 points). The greater Bangkok area is full of concrete buildings and business areas. There are few green spaces in the city. Therefore, people do not care much about green space. Most of elderly Thai people exercise by walking around their houses.

3.6.2 Summary Findings of the Factors in Housing Decisions

Total despondence is 80 elderly households composed of 50 buyers and 30 renters with four of the 80 considered as low-income elderly. The average age is 64 years old. More than 78% of the elderly people stay in Bangkok and around 50% of them stay in detached houses. Around 51% of elderly households are business owners. The average monthly income of them is 112,536 Baht (US\$ 3,751), which means elderly households are in the middle-income group.

Elderly renter households are sensitive to prices, utilities and facilities such as convenience stores, markets, hospitals and government services centers. Both renters and buyers emphasize location is the most important factor of housing decision. A good location means the residence is located near a main road or close to the resident's relatives and easy for commerce.

Location and the transportation systems are interrelated. Full or adequate and good transportation systems in terms of toll ways, mass transit and public transportation help to solve the location problems. It is not necessary to stay in the city center when transportation systems and routes are well developed. This is beneficial for urban planning and suburban land

development. Construction materials quality and security systems are the second important housing decision items. Elderly people prefer to stay in safe housing with good security systems.

3.6.3 Implications for Factors in Housing Decisions

There are little differences in factors of housing decisions between buyers and renters. Most of them would like to stay in stable⁸ and safe housing located in good locations, full of facilities and utilities. They are willing to pay for good housing services at reasonable prices.

Safe housing for elderly households should be elder-friendly houses. At a minimum, the house should have few curves and steps and have handrails installed. The construction materials should be durable. In addition, security systems such as security guards and CCTV are essential for the housing project. In Bangkok area, many people from many regions and other countries come to work and stay. Criminal problems cannot be avoided. Therefore, elderly households need to stay in safe housing with good security systems. The elderly will continue to have failing health problems and are easy prey for criminal elements.

Transportation routes and systems are necessary for community development around the fringe of the Bangkok area. As presented, around 38% of elderly households continue to reside in the central Bangkok area. This implies that transportation systems in suburban areas are not well developed. Therefore, after retirement they continue living in the city center although it is congested but convenient.

3.7 Conclusion and Policy Implications

3.7.1 Conclusion

The ratio of elderly people in Thailand has increased by more than 10%, meaning that by 2005 it became an ageing society and it is expected become an aged society in 2025, which will be a shorter time than it took Japan to become an aged society. Many elderly Thais reside in

⁸ Stable housing means a well-built house with good construction materials.

homes that are inappropriate for their physical limitations. These homes include many steps, curves and slippery floors. Falls and insufficient income are main problems for the elderly.

The typical Thai family composition has changed in several ways. Traditionally multiple generations of a family lived in the same house. More recently, the nuclear or single family is becoming more dominant. Currently, many elderly Thai households are neglected by their children because their children have an obligation to take care of themselves and their families.

Although Thailand is in the first stages of the ageing society and elderly housing has not become a serious problem, the government has to play an important role for elderly housing management in order to prevent future problems. If the Thai government does not prepare well, the ageing population will become serious and will also consume a huge part of the fiscal budget.

Therefore, to reduce unsold units, fiscal costs and create an effective elderly housing management system, it is necessary for Thailand to learn elderly housing development and management policy from the Japanese experience. Japan entered into the ageing society more than 20 years ago, and has a long history of development and successful management; despite the economic and social status differences of the countries.

The objectives of this chapter were to 1) identify the factors affecting elderly households' housing decisions; 2) compare and analyze Thailand's elderly housing policy with Japan's; 3) resolve the problem of unsold units; and 4) recommend housing options for elderly households with less fiscal burden.

Primary data was collected by purposive sampling from an in-depth interview, followed by a questionnaire which was guided by NHA and TDRI. The target group of the field survey was 80 people aged 60 and over, who live in the greater Bangkok area and attended Home Buyers Expo 2013. This study gathered secondary data from additional sources such as journals, pamphlets, websites, academic papers and related research from government agencies. After

surveying and collecting data, the validity and the completeness of the answers were edited before analysis. The overall sample size is 80 questionnaires. The Statistical Package for Social Science (SPSS) was used for computation of statistics.

Using statistical hypothesis testing on comparable means, it found that both renters and buyers have the same average mean score in most of the factors for housing decisions. Renters are more sensitive to prices, utilities and facilities than buyers. It is necessary to provide safe housing and develop other related features to support elderly households' lives after retirement. Living in an elder-friendly house and good environments will decrease fiscal burdens in taking care of elderly and maintain the well-being of elderly people.

However, judging from the highest mean score of buyers and renters, the most important factors are housing prices or rental rates and location. In addition, both groups put more emphasis on the social environments such as security, neighborhoods and friendship as important factors in the elderly housing decisions.

Table 3.13

Elderly Housing Policies by Income Groups

		Income groups		
		Low	Medium	High
Housing Policy	Thailand	Public	<ul style="list-style-type: none"> • Free public housing • Free remodeling home services 	-
		Private	-	Private homecare
	Japan	Public	<ul style="list-style-type: none"> • Public rental housing • Rental public home care • Home remodeling loans • Home remodeling consultation • Encourage welfare society 	-
		Private	Superior rental housing	Reverse Mortgage Loans

Source: Author's compilation

Table 3.13 illustrates housing policy by income groups. The Japanese government and private housing developers support elder-friendly rental housing which provide adequate health care service or are close to the medical center to elderly households. The Japanese government is the main agency, which takes care of low- and middle-income elderly households. At the same time, the government also encourages and coordinates private sector participation in order to supply sufficient rental elderly houses for low-income elderly households by giving subsidies and financial incentives. The government allows private developers to care for higher-income elderly. Higher-income elderly households do not have a housing problem but they may have financial problems. Therefore, the private sector provides Reverse Mortgage loans for the higher-income elderly who are homeowners but have limited income. Higher-income elderly may survive by converting their assets to cash.

The rental rates of public rental housing will be changed in proportion to the elderly household income. The household income ceiling will screen the neediest household to stay in public rental housing.

The Japanese government provides not only public rental housing but also provides low-interest rates for home remodeling or expansion to accommodate the lifestyle of the elderly. Encouragement of family living together will encourage family relationships and help to resolve fiscal burdens.

Thai government provides for low-income and disabled elderly people by supporting free public housing. The government has to pay around 64 million Baht per year to provide for the care of elderly people who live in public housing. In addition, the government through NHA provides home remodeling for the neediest elderly. On the other hand, Thailand private housing developers support full services and complex homecare for high-income elderly households.

There is not sufficient public housing for Thailand's elderly because private elderly housing is too expensive. The government has to play the important role of encouraging private developers to invest in low- and middle-income elderly housing by giving tax or financial incentives. On the other hand, the government should prepare financing and housing before Thailand becomes an aged society.

Therefore, the government should adapt unsold units or on-going housing projects to respond the needs of the elderly by providing good and sufficient transportation systems in order to solve the existing problems of location, utilities and facilities. Furthermore, the government should create good social environments especially by providing safety for elderly households.

3.7.2 Policy Implications

The market mechanism is not functioning well for low-cost public housing; therefore, a government housing intervention policy is needed in order to solve the problem of unsold units and create a sustainable society. In addition, there is insufficient public housing for low-income elderly Thais. According to the housing study of elderly Japanese and field surveys, the possible solutions for solving the problem of unsold units and to encourage housing security for elderly households in Thailand are:

1) Transportation System Management

Elderly households do not need to live in the city center, because they are retired and do not need to commute to their place of employment. Renter and buyer households identify location and transportation as primary concerns. To reduce congestion in the city or solve the problem of location, especially in the suburban areas, the government has to provide effective transportation management in terms of routes and systems. Government may provide shuttle buses services from housing projects to the nearest stations, main roads or shopping centers.

Although this may have negative financial return on investment, it is a necessary for housing development.

It is not necessary to reside in the city center if the transportation systems from sub-urban areas to the city are well operated and maintained. People can commute from home to work easily. Good transportation management serves sub-urban development, helps to resolve the unsold unit problem and saves transportation costs and time, as well as helping to prevent future problems of housing location. Moreover, it will benefit land development around housing projects.

2) Social Environment and Safety

Elderly households prefer to stay in safe housing in a good neighborhood. Therefore, the government should allocate unsold flats with renovated physical and environmental safety, such as the ramps, lifts, doors, toilets, custodial, health care services, patrolling and CCTV to the elderly.

After providing physical and environmental safety, governments can take care of elderly households easily because they live in the same building. It would help to save on investment costs because all necessary facilities and utilities are installed at one time. Elderly households will have a chance to share their life and participate with other elderly households who live in the same place. The emphasis on a welfare society and introducing privately managed health care systems to create care service business will benefit government management and reduce costs.

3) Housing options

Only four of the 80 persons answering the questionnaire are considered low-income elderly. Therefore, the elderly group is not equal to the low-income group. When considering the relationship between low-income and elderly groups, it would be possible to utilize unsold units which were developed for the low-income group. It is possible to modify unsold units to provide

health care and safety for elderly households even though they are not poor. Elderly people can reside in unsold units with some modification.

After providing a sufficient transportation systems and a safe housing environment as suggested in 1) and 2), the government can resolve some of the problems of unsold units and reduce the fiscal burden by pursuing the following options:

- Purchasing

The government should remodel the on-going housing projects or existing unsold units to accommodate the lifestyle of the elderly and match with elderly needs, such as walking-supportive appliances, handles, slopes and toilets.

The government may sell remodeled houses at a reasonable price to middle- and high-income elderly households who wish to buy housing after retirement. Middle- and high-income elderly households want to reside in public housing because they do not want the expense of remodeling their houses. The appropriate units for the elderly should be on the first and second floors of the building. It is possible to sell public housing to the elderly households because the average life expectancy of Thai people is projected to increase from 74 years in 2012 to 78 years in 2025. Therefore, elderly households can buy houses which are suitable for their needs after retirement, and stay in the new house at least 15 years until they pass away.

- Renting

The government should offer public rental housing for the elderly households which wish to rent at special rates. The government should give priority to elderly people to rent the units on the first and second floors of the building. Low-income households which have financial problems and cannot find suitable houses after retirement should be given first priority to stay in public rental housing. The rental rates will vary based on an elderly household income and the

facilities and utilities in the housing project. Therefore, renters have to submit an annual or monthly income reports to justify their eligibility.

Moreover, typical single or married elderly households may want to stay in elderly public housing because they do not want the expense of remodeling their houses. Renting is appropriate for elderly people who cannot stay with their children or who have insufficient income. The government can use revenue from rent to pay loan interest and current project management.

4) Reverse Mortgage Loans

Utilization of existing homes would bring many benefits. The government should give more consideration to Reverse Mortgages because they help to build home equity for middle and high-income elderly who are homeowners but have limited finances. Moreover, it will help to stimulate more competition in the housing market when the housing market is underdeveloped.

Currently there are no protection regulations in Reverse Mortgage loans and the banks can easily create conditions that are negative for the elderly. Therefore, whenever the government finds a good market for the private sector, it should also provide regulations, rules and laws, so both the demand and supply side can enter that market safely.

After that, the government can allow the private sector to design Reverse Mortgage loans. That means the role of government is to ensure a properly functioning whole market. Therefore, the necessary laws, regulations and regulatory reform should be made. These result in less cost intervention, because the government just facilitates the market with law making and oversight.

For Thailand, the government is necessary to reform laws and regulation for Reverse Mortgage loans in order to create new markets and deregulate to facilitate the existing markets to increase private sector participation.

5) Home Remodeling Loans

The government should provide remodeling consultation and loans with low interest rates for elderly people or their children who want to remodel houses to become more elderly-friendly. It will help to enhance good family relationships and create social connections not only within the family but also among other elderly in the community.

6) Fiscal Burden and Elderly Housing

For those markets not easily attracting private sector business, the government either provides incentives or subsidizes demands for households.

For the high-income group, providing good regulations such as regulation reform is necessary to encourage private sector investment. The government has to provide amenity to the market so that private sector businesses can safely operate in that market and the high-income elderly people can also use this system.

Promotion of saving discipline before retirement for every income group is one of the appropriate housing policies that the government should emphasize. To minimize the fiscal costs and maximize social service benefits, the government has to differentiate housing policy for different groups with different needs, as presented in Table 3.14. Furthermore, government should invite the private sector to take care of elderly housing or business development within and around housing projects. The private sector has expertise and is better managed than the public sector. Therefore, involving the private sector, privatization and creating efficient management as much as possible will be beneficial for the government budget and taxpayer in general.

Table 3.14

Housing Responsibility of Public and Private Sectors

Sector	Elderly Income groups		
	Low	Medium	High
Public	o	o	-
Public and Private	o	o	-
Private	-	o	o

Source: Author's compilation

- **Low-Income Elderly Households**

Government has a responsibility to provide sufficient housing or rental housing with basic health services for this group. Although costly, there is a social obligation, both to the nation and to the recipients. To minimize the fiscal cost, government may encourage private sector participation by providing subsidies or financial incentives such as housing construction and management. Private sector participation not only lessens the fiscal burden but also supports standardized house quality and management.

- **Middle-Income Elderly Households**

Government has to assist middle-low-income elderly households because their income may be insufficient to stay in private houses. Government may allow middle-low-income elderly households stay in public rental housing by paying a special rental rate based on their household income. To minimize the fiscal burden, the government has to persuade the private sector to provide houses and health care services appropriate to middle- and middle-high income household needs. The private sector has demonstrated more efficient management than government. Proper management is the very important for creating sustainable housing and social development. The quality of housing and services for this group will be better than that provided for the low-income group housing. This is a selling point that private housing developer can emphasize. The government should work as the housing regulator, when the market is sufficiently

developed. Elderly people in this group can afford to pay for private services, which can be of better quality and be provided quicker than public services.

- **High-Income Elderly Households**

For this group, government does not need to provide houses and services. The government responsibility is to deregulate laws and regulations pertaining to home care establishments and health care services while maintaining the appropriate standards. The private sector can create related businesses to support elderly people in this group. High-income elderly households are willing to pay for good houses and health care services. Therefore, it is better to allow the market mechanism to work for this group.

Chapter 4

Clearing Imbalance in Housing Markets and Reducing Fiscal Burdens

4.1 Importance of Housing and Government Responsibility

4.1.1 Importance of Housing

The United Nations' XXI Housing Policy Agenda emphasizes that each country should provide adequate housing for its population. Therefore, it is a duty for the government to plan and establish housing policies in order to support housing for the growing population. Housing is one of the most essential inputs to national development. It creates opportunities in economic, social, political and civic development. Residential construction stimulates the economy directly by generating jobs, wages and tax revenues, and indirectly via demand for goods and services required by the occupant of the new homes.

A strong economy produces demand for labor, increases household income, and finally enhances the household demand. Housing investment is a major driver for economic growth. On the social side, housing is one of the fundamental basic needs, after food, clothing and medical care. Safe homes and neighborhoods, in which residents are satisfied due to housing conditions and public services, build social security and stability. In addition, housing is also an effective way to promote democracy, public participation and good governance.

Many low-income households in developing countries, including Thailand reside in unstable housing, such as slums in the urban areas. A slum is a breeding ground for crime, disease and bad social environment. Indeed, nobody wants to stay in slums; however, they may be able to choose a more desirable living place. Therefore, the government should play a significant role for solving the housing problem and providing housing especially for low-income households.

4.1.2 Government Responsibility

Government builds public housing such as flats or single houses on the basis of low-cost production but it has to meet the standards and laws. Public residences are always located in the urban vicinity where the land is cheap, but they are far from the center of employment and social amenities, so, transportation from home to the city is costly.

The Thai government spends considerable sums of money to support housing for its population, especially low-income households. Unfortunately, the government housing supply does not match with the housing demand. It has created a huge fiscal cost and adds to this through the continued building of new BEA units while maintaining unsold and reposed units.

In addition, Thailand has already become an ageing society. The birthrate of Thai people decreases while life expectancy increases. The household size of Thailand decreases and nuclear families increase. The working generation prefers to work and stay in the city center. Hence, they leave their families at home in the sub-urban or rural area. Most of the elderly households stay in their married couples, while some of them stay alone (TGRI, 2012). Many elderly people face difficulties remaining in current houses because they are decrepit, have many steps and curves and slippery floors (Murphy et al., 2002; Rupkhamdee et al., 2007).

As mentioned, large numbers of unsold units create additional fiscal burdens. It is necessary to solve the unsold unit problem in order to reduce the fiscal burden and encourage people to stay in stable housing. If low-income and elderly households need social benefits, the government has to subsidize them. The government has to develop housing policies to support housing for all with fewer government subsidies. Low-income and elderly households are the possible groups for solving the existing problem of unsold public low-cost housing units. In addition, enhancing private sector participation in housing development will create benefits for

fiscal burdens, private businesses, employment and the sustainable housing market and development.

The Thai government has to apply lessons learned from developed countries such as Japan, Singapore, Hong Kong and Malaysia in order to find appropriate housing management policies and financial incentives to persuade private sector participation.

4.1.3 Research Objectives

The objectives of this chapter are:

- 1) Resolve the imbalance in public low-cost housing market
- 2) Analyze and identify effective housing policies for reducing fiscal burdens
- 3) Create sustainable housing development

First an overview of the low-cost housing supply will be provided, followed by the resulting need for government intervention. Then the applicable referenced literature supporting housing investment and its benefits will be presented. This will be followed by the data and methodology used in the analysis. Next, a cross-country housing policy and subsidy comparison between Thailand, Japan, Hong Kong, Singapore and Malaysia will be provided. This will be followed by a description of Thailand's housing development direction, and viewpoints from financial institutions and housing related agencies. Recommendations for clearing the imbalance of housing units and reducing the fiscal burden will be provided. Finally, conclusion and policy implications will be presented.

4.2 Facts Statistics and Research Questions

4.2.1 Thailand Low-Cost Public Housing Supply

How to construct standard quality public housing with the lowest cost of construction and management is a challenge facing the Thai government. NHA constructs BEA by using Solid Plank or Hollow Core Slab and Prefabricated Structural Component systems which are the

highest technology that the government can afford. Private developers use high housing construction technologies such as Automated Pallet Circulating System and Tunnel Form. It is very easy to control the construction quality and save construction time and cost. The Thai public housing cost is 470,000 Baht (housing prices details are already explained in Chapter 2) when the private low-cost housing price is 0.5 -1.2 million Baht per unit. The government can sell houses at a lower price than private business because of the difference in land cost.

In Thailand, few housing developers are interested in low-income housing construction because low-income households cannot afford to own houses. Therefore, private housing developers always take care of the middle and high-income housing market. Pruksa Real Estate Public Company Limited is the one of famous housing developers in Thailand. It constructs and sells houses to general households. The price of townhouses for low-income households is 0.6 - 1.2 million Baht (US\$ 20,000-40,000) per unit and 0.5-0.8 million Baht (US\$ 16,667-26,667) per unit for a condominium. Pruksa Company has its own factory and uses high technology for construction called Cast-In Situ Load Bearing Wall Structure and RC Load Bearing Wall Prefabrication. It uses mass production and creates an economy of scale. Therefore, the company can control the cost and set the selling price 10%-15% lower than other competitors (Pruksa, 2011). However, the main business target of the company is middle and high-income groups.

In a bubble period or the economic slowdown, private housing developers postpone new construction and convert to emphasize on housing management to reduce the management cost.

4.2.2 Responsibility of Government Intervention

Society requires government policy to intervene in the housing market because housing is principal necessary. Rosen (1995) suggested that even though the housing market moves to the complete market by itself, the government still has to play a role in the housing market because of:

1) Efficiency

Housing market intervention considers the efficiency of directly supporting suitable and high-quality houses for people. At the same time, it also considers the efficiency of intervention that will cover the external outputs such as stimulating consumption and investment in housing products, urban landscaping, and economic value added or balancing urban growth.

2) Equality

The housing market cannot allocate resources perfectly and can cause society inequality. The reason is that sometimes the market does not have enough housing supply for every income level, especially low-income or poor people who face housing problems (Hyman, 2005). Therefore, the government has to play a key role in terms of guaranteeing the equality of housing allocation and income distribution, such as enhancing home ownership.

However, in practice, the government housing intervention may cause some problems and others effects which will not create the intended efficiency and equality.

4.2.3 Research Questions

- 1) What are the possible housing options for solving unsold public low-cost housing units?
- 2) What kind of government intervention is necessary for creating sustainable housing development?
- 3) What kind of housing policy should be implemented to reduce fiscal burdens?

4.3 Literature Review

4.3.1 Housing Investment is Good for Growth⁹

The Thailand Development Research Institute (TDRI) studied the impact of housing investment in 2003 by using Computable General Equilibrium (CGE) model analysis. The housing prices are divided into three groups, high, medium and low. The result of increasing housing investment in every housing price level by 20% will impact macroeconomic factors, government revenue and social factors such as income distribution and poverty.

1) Macroeconomic Impacts

By increasing housing investment by 20% in every group equally, the growth rate increases by 0.35 percent points in the industrial sector, and low-cost housing will gain highest economic growth rate at 0.22 percent points. The growth rate of low-cost housing increases by 0.18 percent points in the industrial sector, followed by 0.07 percent points in the service sector and 0.02 percent points in the agriculture sector. By increasing housing investment demand for one unit in high-cost housing, Gross Domestic Product (GDP) will increase by 2.09 points. The reason is high-cost housing has higher value-added, especially profit to housing prices more than medium- and low-cost housing (Table 4.1).

⁹ This topic is based on the following research paper with NHA permission. NHA delegates to TDRI research on “The Impacts of the Housing Investments in Thailand. Thailand Development Research Institute. (September 2003). Chapter 5, 89-106.

Table 4.1***Housing Demand Investment Impact (increasing 20% in every group)***

	All groups	Housing price levels		
		High	Medium	Low
Economic growth (%)	0.21	0.05	0.05	0.22
Agricultural sector	0.04	0.01	0.01	0.02
Industrial sector	0.35	0.09	0.08	0.18
Service sector	0.12	0.03	0.02	0.07
Multiplier				
GDP/Housing Investment Demand	0.81	2.09	0.68	0.67

Source: Thailand Development and Research Institute, 2003

2) Impact on Government Revenue

By increasing in housing investment 20% in every group, the government revenue in terms of taxes will increase by around 2,460 million Baht (US\$ 82 million) (or a 3 percent increase in income tax) (Table 4.2). Government will get the highest tax collection, around 1,317.4 million Baht (US\$ 44 million), from low-cost housing investment in terms of direct taxes (461.1 million Baht, around US\$ 15 million) and indirect taxes (856.3 million Baht, around US\$ 29 million).

Table 4.2

Impact on Government Revenue (increasing million Baht)

	All groups	Housing price levels		
		High	Medium	Low
Total tax	2,460.7	582.9	558.7	1,317.4
Indirect taxes	1,578.6	364.7	357.2	856.3
Value added and commercial tax	538.2	131.0	123.0	283.3
Excise tax	491.0	120.6	102.4	268.3
Import tax	549.3	113.1	131.9	304.7
Direct tax	882.1	218.2	201.5	461.1
Corporate income tax	547.8	135.7	124.8	286.4
Personal income tax	334.3	82.5	76.6	174.7

Source: TDRI, 2003

3) Social Impact (income distribution and poverty)

Table 4.3

Social Impact from Increasing in Housing Investment

	All groups (%)	Housing price level		
		High (%)	Medium (%)	Low (%)
Household income (increase %)	0.28	0.07	0.06	0.15
Income distribution				
1) Highest 20 percent	57.76	57.75	57.75	57.75
2) Middle 20 percent	3.91	3.91	3.91	3.91
3) Lowest 60 percent	38.33	38.34	38.34	38.34
Ratio of 1)/3)	14.77	14.77	14.77	14.77
Gini coefficient	0.51	0.51	0.51	0.51
Poverty				
Agricultural household income (increase %)	0.23	0.06	0.05	0.12
Non-agricultural household income (increase %)	0.29	0.07	0.07	0.15

Source: TDRI, 2003

Table 4.3 shows that increasing of housing investment by 20% in every group creates general household income increases of 0.28 percent points. In particular, by investing in low-cost housing, household income will increase by 0.15 percent points, which is the highest when compared with other groups. Increasing housing investment does not have much impact on income distribution and Gini coefficient among the three groups.

However, increasing housing investment has a positive social impact such as income generation and decreased poverty, especially when investing in low-cost housing. By investing in low-cost housing, non-agricultural household income will increase by 0.15 percent points, and agricultural household income will increase by 0.12 percent points.

Therefore, continued investing in housing creates benefits to the overall economy and society in terms of economic growth, poverty reduction, the well-being of residents and government revenue. Investing in low-cost housing not only generates higher economic growth but also increases government revenue, household income, and reduces poverty.

4.3.2 Market Failure and Government Intervention

The concept of perfect market allocation of resources came from Baumol et al. (1988). They believed that economic models relied upon the concept of the invisible hand first discussed by Adam Smith. In these models, the perfectly competitive economy was able to allocate resources efficiently, without the need for market intervention by outside agents, including governments. If the marketplace was to function efficiently, several conditions needed to exist such as freedom of choice and certainty of demand. In addition to these prerequisites, the perfect market required perfect consumer and supplier information, no rent-seeking behavior and no moral hazards. If these conditions were not met, market mechanisms would fail to produce the efficient allocation of resources.

Groenewegen et al. (2014) argued that governments intervened in the marketplace, with the public sector being engaged in providing services (and in some cases goods) whose scope and varieties are determined not by the direct wishes of the consumers, but by the decisions of government bodies. This view implies that governments intervene for many reasons, including redistribution and stabilization functions. While market failure is one reason for intervention, other considerations, including questions of equity and social justice, determine the nature and the extent of government intervention. In addition, he argued that a distinction needed to be made between the public provision and the public production of goods, if government intervention in the economy is to be understood. Goods may be produced in the public sector and sold in the marketplace, while privately produced goods may be provided by the public sector.

Groenewegen argued that why some goods were supplied by the private sector and others by the public sector was a complex issue whose answer was not solely determined by political imperatives. One of the primary reasons for government intervention was the absence of a perfect market for many socially valuable groups.

Sheridn et al. (2002) said that the governmental support for social and public housing will always have an important influence on the credit quality of the social housing sector. Nevertheless, the level and type of government support varies over time and from country to country with some social housing providers benefiting much more than others.

Furthermore, economists such as Milton Friedman from the Chicago school and others from the Public Choice school argued that government should not necessarily attempt to solve market failures, because the costs of government failure might be worse than those of the market failure it attempts to fix. Rosen (2002) supported the position that government subsidizing the housing supply by building houses or rooms and lending, especially to low-income households at lower than the market price may create high costs and sometimes has more cost than benefit. The

reason is government has to bear the (huge) difference between the actual cost of housing construction price and low lending rate in order to clear slums and support housing for all. If the government has to support many low-cost housing units, the fiscal burden will be large although people can stay in stable housing. Government continuing to support low-cost houses to low-income households may reduce their incentive to work to accumulate money for renting or buying better house, and that may create negative impacts to social development and the government has to take care of them forever.

4.3.3 Producer and Consumer Subsidy

Government intervention in the housing market is necessary when the market does not function well. Housing prices in the private market are higher than what low-income households can afford. It is necessary to create social equality, but it is very costly for the government (Barr, 1992).

The government may provide producer subsidies for increasing housing units through tax incentives. On the other hand, providing consumer housing subsidies for renting and buying in terms of vouchers, discounts or cash grants will increase demand for housing especially among low-income households. The aim of consumer subsidies is to encourage people to reside in stable housing.

Normally, providing producer subsidies occurs when the government cannot produce or support public or social housing. Low-income households in particular have high housing demand and the government cannot provide as required. Therefore, the government must invite private sector participation. Producer subsidies are given in order to provide and improve living environments in terms of standard housing, location and surroundings. It is difficult to find land for public housing construction in the urban areas, so, the public or social housing has been

forced to locate in those urban areas lacking services, infrastructure or public transportation (Dennis and Fish, 1972).

Consumer subsidies in terms of housing allowances are given for encouraging people to own stable housing. In the short run, housing allowances will benefit directly the promotion of stable living. When people have stable housing, in the long run, they will try to improve the housing standard or quality of housing. It will benefit housing services and additional housing construction. In addition, giving purchase vouchers or discounts may help to reduce migration and develop suburban areas.

Therefore, it can be concluded that if the welfare recipient efficiently uses the consumer housing subsidy, it will create a positive economic and social impact in the long term. Increasing in housing demand will result in more housing being built. Producers will construct decent housing to meet the consumer demand (Howenstine, 1986). However, in general, subsidizing housing for the lowest income group was not perceived as being economically productive, but as a social overhead (Wakely, 1989).

Most developed and developing countries seldom face the public low-cost housing excess supply. The BEA units in Thailand are a special case. The BEA problems result from unsold housing project units which are located far from the city and have inadequate transportation systems. Furthermore low-income households, which would be prime candidates for these units, cannot afford to buy them.

In the United States of America (USA), the government provides vouchers for the general public in order to increase better home accessibility and reduce the poverty concentration in the city (Varady et al., 1999). The government of Germany also provides rent subsidies to tenants in order to limit housing costs to a standard percentage of the disposable household income. These subsidies remove a portion of the financial burden for the households by paying a portion of the

rent. Rent subsidies will vary based on the average rental rate in each area and household income (Tomann, 1990).

The aim of providing consumer rent subsidies is to increase consumer housing affordability. After all, the purpose of rent subsidies is to improve the living quality of low-income people and also encourage private developers and landlords to improve the quality of the rental residences.

4.3.4 Necessity of Transportation Systems and Housing Development

Transportation networks need to be considered in conjunction with housing planning and development. Placing emphasis on increasing road systems for private cars is not a stable and sustainable method of transportation system development. It will lead to high costs in gasoline, pollution, health and time. Therefore, it is necessary to emphasize and support the integration between the transportation system and housing development, especially in urban planning.

Integration policies between transportation development and housing will create strength and opportunity in the community (Kim, 2012). People can create businesses or work near their houses. In this manner, it is not necessary to commute and find jobs in the center urban area. Therefore, the government should first support development of public transportation instead of private cars to reduce road congestion and commute times. Secondly, the government should persuade the private sector to make long-term investment in the transportation systems and housing development. Thirdly, increase the participation among related agencies and communities for housing development.

Rosenbaum and Popkin (1991) studied the case of suburban movers in Chicago. They found that suburban movers were more likely employed than the people who stay in the city, although the wage per hour or the working hour is same. Most of the suburban movers had higher levels of educational attainment, more satisfaction with school, were more likely to attend college

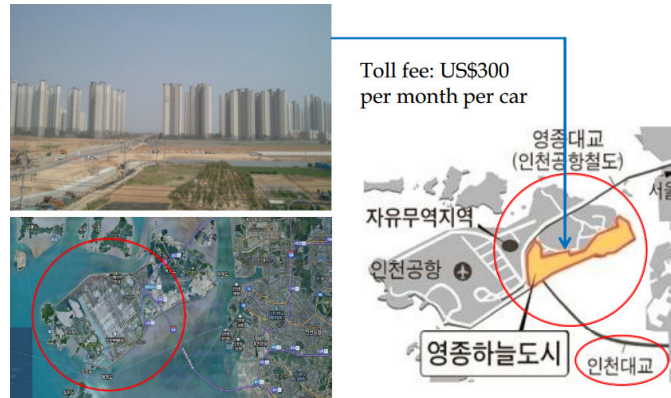
and enroll in special educational programs than their city counterparts (Rosenbaum, Kulieke & Rubinowitz, 1987, and Kaufman & Resenbaum, 1992)

In Japan and South Korea New Towns were established to reduce city congestion. The government of South Korea constructed a New Town named Incheon Free Economic Zone (IFEZ) on reclaimed land. IFEZ is composed of three zones, Songdo, Yeong Jong and Cheong Na. Songdo is the main center of IFEZ development in terms of being a global business hub and high technology. Incheon International Airport is located in Yeong Jing which the government targets to be a center for international logistics, tourism, and relaxation. Cheong Na is a leisure center and has a world-class amusement park. The Korean government supports this project, but overall management was performed by the private sector. Therefore, there is no potential political corruption problem.

However, these people face a high transportation cost problem. They have to pay a high cost in toll fees of around US\$ 300 per month per car to commute from home to their workplaces in Seoul or Incheon, as shown in Picture 4.1 and 4.2. Although there is bus service (Picture 4.3), it is insufficient, slow and inconvenient. Currently, there are not many households residing in Songdo. The reasons are that Songdo Town opened only very recently (in 2011) and the transportation system is not adequate. Therefore, the transportation system is one of the most important factors for housing decisions.

Picture 4.1

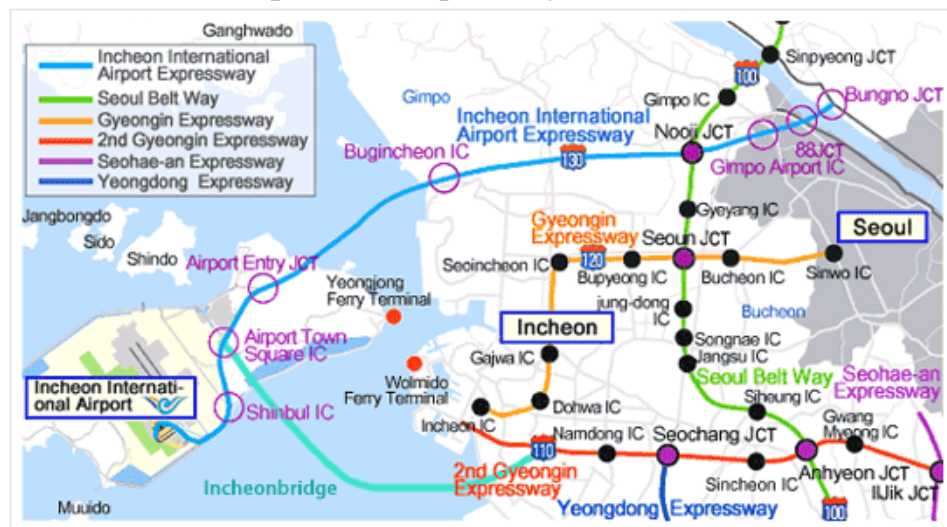
Poor Case of Housing and Transportation in South Korea



Source: Tae Hyung KIM, UNESCAP, 2012

Picture 4.2

Transportation Expressway in South Korea



Source: https://eng.kntc.re.kr/sub01_10_02

Picture 4.3

Bus Service between New Town and City Center



Source: <http://www.oknation.net/blog/print.php?id=747840>

Japan has one of the top-ranking transportation systems in the world. The Japanese government supports a good, adequate, and efficient transportation system in terms of the subways, trains and buses required to minimize transportation time and cost with good quality management. Fukuoka is only one of the cities which have a great transportation network (Picture 4.4). Problems with housing and transportation have been reduced. Although people live in the sub-urban area, they can easily commute from home to work in the city. The transportation systems and networks in Japan are adequate, punctual and reasonably priced.

Picture 4.4

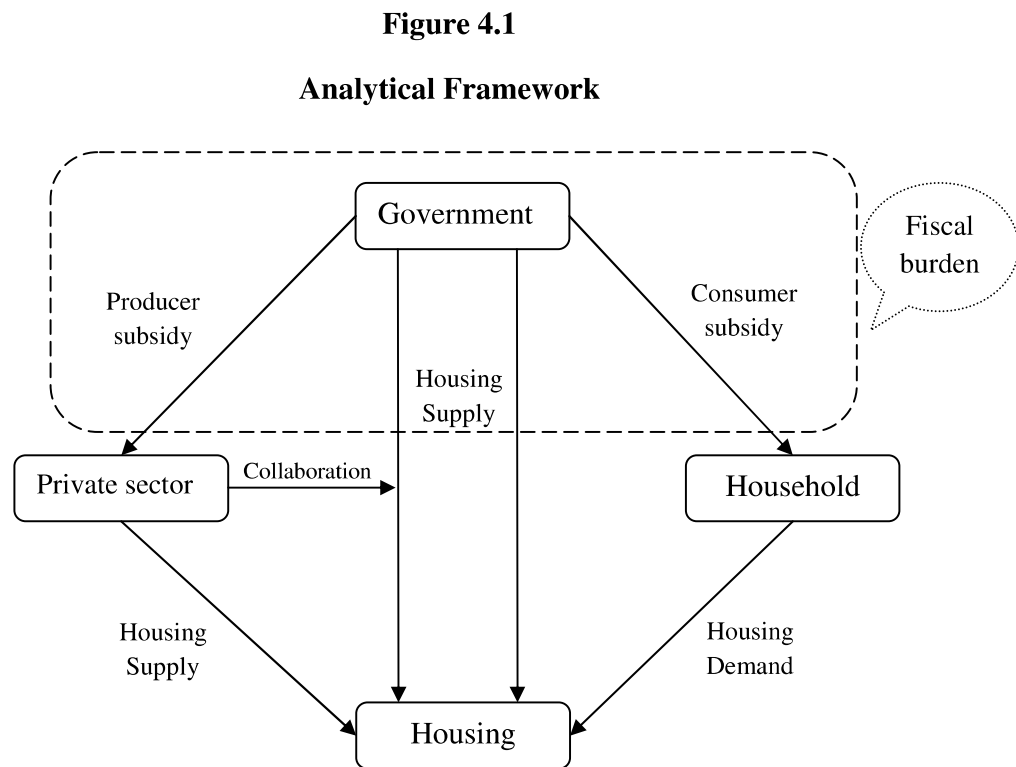
Good Case of Housing and Transport in Fukuoka, Japan



Source: Tae Hyung KIM, UNESCAP, 2012

4.4 Methodology and Data

4.4.1 Analytical Framework



Source: Author

Government supports consumer and producer subsidies for housing development especially housing for the low-income household market. The government has the responsibility to support adequate housing for all households. Although it is good for people to stay in stable housing, this creates large fiscal burdens. The government not only directly supports producer subsidies, such as regulations or cash grants, but it also tries to coordinate with the private sector to increase the private sector's role in the housing market, especially housing for the low-income market through it is less profitable.

Increasing private sector participation through purely private investment and Public Private Partnerships will ameliorate the fiscal burden and private business. Minimizing the fiscal

burden and maximizing household benefits are important issues to investigate. Various methods to promote collaboration and enhance private participation will be researched and suggested in this chapter.

4.4.2 Data and Methodology

1) Data

To complete the analysis, it was necessary to collect primary data from focus groups and in-depth interviews with financial institutions, state-owned enterprises, government offices and research institutions such as Chulalongkorn University, GHB, GSB, KTB, NESDB, NHA, NSO, the Public Debt Management Office, and REIC and *secondary data* from government research documents and related research.

2) Methodology

Multinational case comparisons were used to find lessons and prepare housing policy in advance for the Thai government. Descriptive analysis is used for finding solutions in this chapter. Results from focus groups and in-depth interviews will be summarized, explained and presented in paragraphs and tables.

4.5 Government Housing Policy and Subsidy Comparisons

Government has been heavily subsidizing public housing in terms of providing special rental rates to low-income households or selling prices in order to match with low-income household affordability.

4.5.1 Housing Policy and Subsidy

1) Singapore

The Singapore government has accorded high political priority and commitment to housing for every citizen by establishing the Housing and Development Board (HDB) in 1960 for taking care of national housing development (Agus, Doling & Lee, 2002). In 2000,

approximately 80% of the land in Singapore was state land and this has facilitated the state's provision of housing while about 80% of residents reside in government built dwellings (Phang, 2000). The main objective of the housing policy is slum clearance.

Government emphasizes home ownership promotion in terms of owner-occupiers or leases of public housing. The government provides good public housing, high rise flats, which are located in good environments and neighborhoods. Each town has facilities such as supermarkets, department stores, shops, banks and recreational centers. HDB gives two grants, around SG\$ 30,000 per time, for eligible households consisting of, initially, first-time buyers with household income not over SG\$ 1,500 per month and secondly, people who decide to upgrade their dwelling from a flat to larger or newer flat. It helps low-income households own houses at below-market price. Public housing is sold on a 99-year leasehold basis. Moreover, the government allows households to use the Central Provident Fund (CPF)¹⁰ for the purchase of resale HDB flats in terms of down-payment and mortgage payments.

The government also supports infrastructure and transportation system development such as roads from the residences to rapid mass transit, and from industries to the retail locations.

2) Hong Kong

The Hong Kong government develops New Towns based on the concept of self-containment and balanced development. It helps reduce the need to commute to the city center by providing adequate work opportunities, shopping, recreational and community facilities in New Town (Land and Work Branch, 1984).

The government provides housing subsidies through rental rates or regular monthly housing allowances. The government encourages households to rent houses until they can afford to buy houses. The government offers ten year and over renting contracts by considering the

¹⁰ The Central Provident Fund is a social security savings plan for elderly citizens.

means-tested households. The contract is named double net rent plus rates¹¹ and was implemented in 1987. The objectives are slum clearance, encouraging people stay in standard stable housing and creating strong families.

The government sets the Subsidy Income List (SIL) for equality in housing accessibility. Only the eligible low-income households can apply to rent public housing. If families whose household income exceeds the ceiling want to continue staying in the public housing, they are required to pay an increased rent of around 1.5-3.0 times the base rent plus rates. However, if the household income drops below the SIL for six consecutive months, they can apply for an extension to stay in public housing. This system creates efficient housing units allocation or redistribution for the government. The housing units are provided to the neediest households.

In addition, the government also promotes home ownership through reducing the buying fees for first-time buyers and providing interest rate-free loans under the Tenants Purchase Scheme (TPS) for buyers. The government offers discounts of around 88% of the rental housing market value to encourage home ownership. This reduces the long-term burden of heavily-subsidized public rental housing.

3) Japan

The government has played and continues to play an important role in housing since World War II in terms of housing supply, housing allocation and housing laws and regulatory reform. There were very limited direct provisions of housing, mainly for those whose needs were not met by the market, with the main encouragement being for the extension of home ownership and private renting through subsidies by the central government (Agus, Doing and Lee, 2002).

¹¹ Double net rent plus rates means when household income is more than the SIL that government sets and the household does not want to move out of the public housing, those households have to pay double rent every month.

The rates of public rental housing are usually set below the market rate. Rental rates vary based on household income, location, family members, and the independency ratio and applicant age. Each household has to declare and submit its annual household income to the government office to determine its continued eligibility to receive a housing subsidy. When household income exceeds the ceiling, those households have to move elsewhere.

Presently, the government of Japan has been successful in providing houses for low-income households. Most of them stay in stable housing. The central government does not manage low-income housing directly but designates local government the responsibilities of low-income housing and related housing problems by using the revenue from local tax for operation and coordination with the private sector. For other income groups, the central government encourages private sector participation. Good coordination between public and private sectors creates many benefits for economic and social development.

4) Malaysia

The objective of the National Housing Program of the Malaysian government is slum clearance. Housing policy was changed gradually to follow the political and government interests. The government sets up rules to manage low-cost housing accessibility by considering household income, age and family members. The government constructs public housing and allows low-income households to rent at special discount rates. However, the government tries to reduce the subsidy by permitting low-income households to buy the current rental units. The public housing price is sold at RM 250,000 and is the lowest price on the market. In addition, the government supports private housing developers through interest rate subsidies and revolving loan funds.

5) Thailand

The Thai government assigns the NHA to take care of housing for low-income households. The objective of the housing policy is home ownership promotion, especially among low- and middle-income households. NHA constructs public low-cost houses (BEA) with a minimum standard and sells to low-income households at subsidized prices. NHA is a non-profit agency that provides housing to needy households. NHA's objectives are to overcome the problem of slum and to increase the tenancy rate. The large number of unsold units still persists because BEA does not match with low-income household needs. Moreover, NHA has to buy the sold units back with interest from banks when low-income households default on payment for three consecutive months because NHA serves as a loan guarantor for five years. Therefore, the government has to bear large construction, maintenance and interest rate costs, as well as buy back debt, as explained in Chapter 1.

Even with zero land costs, private developers in Thailand say it is difficult to build houses profitably and sell at the same price as BEA at 390,000 Baht, so they avoid this market because the margins are too thin.

The government has decided to reduce the transfer fee from two percent and mortgage registration fees from one percent to 0.01 percent to encourage home ownership. Furthermore, the government has given tax exemption and incentives to private housing developers in terms of corporate income tax exemption for housing costing less than 1.2 million Baht, especially houses in the greater Bangkok area and industrial zones. The condition is that project developers have to construct at least 50 units with the minimum housing standards.

Housing finance is the main problem that NHA faces. NHA needs long-term mortgage loans with low-interest rates. Therefore, researching housing finance options is necessary for NHA.

4.5.2 Summary of Housing Policies and Subsidy Comparisons

Each observed country promotes home ownership by supporting public rental housing for the population especially low-income households (Table 4.4). Supporting rental housing for low-income households is the first step of the Housing Ladder. This helps people have stable housing initially and these households can upgrade their houses after their income increases. In addition to supplying rental housing, the government provides adequate transportation systems and facilities within and around housing projects. Therefore, all of the countries studied except Thailand do not have the problem of public housing location. The governments differentiate rental rates by primarily considering the household income and housing location. Moreover, governments allow renters to buy their current rental units at a special price, which promotes home ownership and reduces the fiscal cost for taking care of rental units. In addition, governments coordinate with the private sector in housing development in order to minimize the fiscal cost.

Most of the consumer subsidies that governments support are for public rental housing, selling houses at special discounts and reducing the housing transaction fees. On the other hand, governments support producer by providing land for housing development, deregulating and providing financial incentives. However, all lands in Singapore and Hong Kong are owned by the state. Therefore, it is not difficult to implement housing policies.

Thailand is the only country of the study group that mainly sells public housing to low-income households. The government has neglected researching low-income household characteristics, such as the ability of the household to afford to buy housing, while neglecting house and transportation development.

Table 4.4*Summary of Government Housing Subsidies*

Country	Objectives of the policy	Consumer Subsidies	Produce Subsidies
Singapore	Home ownership promotion through a 99-years lease	<ul style="list-style-type: none"> • Supply standard quality flats • Support infrastructure, transportation systems and facilities • Give grants for the first-time buy and upgrade from flat to larger or a newer flat • Allow Households use Central Provident Fund for purchase of resale public housing 	Support lands, loan and deregulation
Hong Kong	Home ownership promotion through rental housing	<ul style="list-style-type: none"> • Supply public rental housing • Offer 10 years and over renting contract • Reduce house buying fees for first-time buyers • Give a discount up to 88% of market value of rental housing for sell 	Support lands
Malaysia	Slum clearance	<ul style="list-style-type: none"> • Supply public rental housing • Allow buying the current rental units at special prices • Allow households use Employees' Provident Fund for buying house, 	Loan interest rate subsidy and revolving loan fund
Japan	Encourage the extension of home ownership	Supply public rental housing at special rental rates	Support lands
Thailand	Home ownership promotion	Sell public housing at a discount price, Reduce buying fees, Support loan for buyer	Support lands and corporate income tax exemption

Source: Author's compilation

4.5.3 Reducing Fiscal Burden of Government Intervention in Housing Markets

1) Home Ownership Promotion

Promoting home ownership, especially for low-income households living in public rental housing significantly decreases the government housing subsidies and rental units' maintenance costs. Moreover, home ownership promotion will create an employment opportunity in and around the housing project, and will increase family stability and security. Home ownership allows the owner to have increased pride and self-respect.

2) Public Private Partnerships and Privatization

Public Private Partnerships (PPPs) is one of the most appropriate options of government housing policy. It engages the private sector in infrastructure investment, housing construction, housing services, financing operation and maintenance housing units. PPPs bring the efficiency in production and marketing expertise of the private sector in terms of accountability and management. The PPPs model is expected to boost the macro-economic conditions of the city with its multiplier effects (Sengupta, 2006). However, implementation of PPPs requires clear laws and regulations, which always takes time.

In many countries such as Japan, Hong Kong and Malaysia, PPPs have been used in housing construction and development. The government of Japan has assigned the Japan Housing Corporation (JHC, 1955-1981), the Housing and Urban Development Corporation (HUDC, 1982-1999), Urban Development Corporation (UDC, 1999-2004) and Urban Renaissance Agency (UR, 2004-present) to coordinate with private sector groups such as developers who want to join housing development projects with the government. The government develops housing projects in terms of rental flat construction for middle- and middle-high income households, while landlords allocate their additional land for businesses such as shopping centers,

complexes, sports centers and factories. However, the government is still working on housing for low-income households.

The Hong Kong government through the Hong Kong Housing Authority has coordinated with private housing developers since 1970. The government owns all land in Hong Kong. Therefore, it offers lands and loans for public housing development. Some loans are non-interest bearing capital, while others are provided at low-interest rates.

The government of Malaysia has invited private developers to cooperate in housing provision since 1957, whenever the government improves the basic infrastructure. Government is a key player in providing public housing for low-income households. Since 1971, private housing developers have played as a key role in housing provision, ensuring that middle- and high-income households can live in decent houses.

4.6 The Direction of Housing Development in Thailand

4.6.1 Financial Institutions and Related Housing Agency Viewpoints¹²

1) Financial Institutions

The Government Housing Bank (GHB) and the Government Saving Bank (GSB) are the main financial institutions which provide loans for BEA clients. GHB is a special-purpose financial institution under the Finance Ministry's supervision. Its main objective is to help secure appropriate housing finance for the general public, especially low-income households. Currently, GHB coordinates with private housing developers for condominium construction for sale. The selling price must be less than three million Baht per unit. The objective of this coordination is to support housing for middle-income households. In addition, GHB also supports loans for rental apartment construction. The rental price should be around 3,000-5,000 Baht. It will aid in slum clearance and support stable housing for young workers. GHB supports only loans, requiring

¹² Result from focus groups and in-depth interview

private developers to take care of the location and associated matters. Private developers have to demonstrate the project's feasibility and apply for housing loans from GHB and take care of location, customers, and sale. Project construction takes around 9-12 months. This type of coordination will be considered case by case. It can be short-term or long-term depending on GHB considerations.

However, the problems between GHB and private housing developers are: 1) private developers conceal part of construction in order to reduce the funding cost, and 2) private developers use unsuitable tactics when applying for the housing construction permission from the government.

Low-income households are rejected for loans from other commercial banks because they have insufficient income and statement. GHB tries to approve housing loans by requiring low-income households applying for the housing loan to submit the formal monthly rent receipts for 12-24 months. The consecutive rent receipt displays the ability of the applicant to afford the housing. The benefit target groups for the relaxed regulations are temporary or informal workers and street vendors.

The Government Saving Bank also supports housing loans for low-income households. The main target groups of GSB are company workers (39%) and government officers (24%). Most of the GSB clients, 59%, apply for housing loans of less than one million Baht (GSB, 2011). In addition, GSB exempts all housing loan management and operation fees for low-income applicants.

Krung Thai Bank (KTB) is the largest state-owned financial institution in Thailand. KTB provides a full range of financial services to all clients throughout the country and around the world. In terms of housing, KTB coordinates with private housing developers by supporting loans for rental apartments and condominiums, and house construction for sale at

more than three million Baht per unit. Low-income households are not the target group of KTB because KTB takes care of middle- and high-income households who have monthly income more than 40,000 Baht (US\$ 1,333). KTB approves housing loans by mainly considering the cash flow and Loan to Value ratio of applicants which are limitations to low-income households.

However, KTB tries to help low-income households to have stable housing. KTB has cooperated with private housing developers for more than ten years by loan approvals for rental apartment construction especially those near markets, universities and business areas.

Location is a prime factor for housing decisions. It will reduce transportation time and costs which matches with household demand. It is impractical to promote home sales in more expensive areas, to those who do not have adequate income to afford those homes. Especially in the city center or urban area, land prices are so expensive that is not possible for every household to buy. Rental contracts for prolonged periods, such as ten years, may be another option to promote stable living.

2) Research Institutes

A major problem with BEA is that although many houses have been built, the housing does not meet with the needs of the potential occupants. A second problem is that too many houses have been built and are continuing to be built. Housing can be provided in two ways: first, by owning a house and second, by renting a stable housing. No study can confirm that people necessarily have to own homes. Home ownership is not the only solution for the housing problem. Renting and buying help to upgrade well-being and the security of households. Some households can afford to buy condominiums at two to three million Baht, but they decide to rent for many reasons.

It is important to support rental housing, condominium and apartment construction. It will respond to household needs especially for the urban-area households, and help reduce the

housing problem. Moreover, it is necessary to investigate what households can afford. If the household does not have the capacity to buy or does not want to buy, the government has to provide rental housing which is located in a safe and good environment by using government land and property. Low-income households, especially in slums or urban areas, can afford to rent otherwise they would have to go back to the sub-urban or rural areas. Therefore, it is important to provide housing conforming to what the households can currently afford.

The participation of private housing developer participation is necessary. For instance:

- Baan Board of Investment (Baan BOI) is a good strategy for encouraging private housing developers to provide houses for low-income households by giving tax benefits from the government.

- Baan Pruksa is a very successful low-cost housing project implemented purely by a private developer called Pruksa Real Estate Public Company Limited. The houses were sold at 600,000 Baht per unit. They were well-received and met household needs although more expensive than the public housing (BEA), but compensated by better housing quality and space. Details of Baan Pruksa are explained in Section 4.2.

- Retail housing developers have better capacity and efficiency to provide houses for low-income households. Hence, NHA should stop building houses for low-income households and work as a regulator.

3) Housing Related Agencies

NHA has around 5,000 rental units in the Bangkok area. NHA faces the problem of increasing rent. Although the rent contract specifies the rental rate will be adjusted every three years, when NHA announces the new rental rate, public housing residents always resist. Ultimately, NHA cannot increase the rental rate. The important issues which need to be investigated are: 1) How should government physically support housing?, 2) How can

appropriate funding sources be found?, and 3) How can the government subsidies be reduced while housing development still persists?.

The office of National Economic and Social Development Board (NESDB) and NHA suggested changing the housing policies from selling to renting. NHA also supports rental housing and apartment construction because the new generation tends to rent rather than buy. After renting for 40-50 years, the buildings have deteriorated. NHA has ability to renovate and reconstruct in order to build high-rise buildings and increase housing density because the buildings are NHA's assets. If NHA sells all its units and land, in the future it cannot renovate, reconstruct and have land for housing development. Those buildings and surrounding areas may turn to slums or areas with high crime rate. During the rental period, the government has to develop transportation systems such as rapid mass transit as well.

In addition, the percentage of public housing reconstruction should be changed from supporting all units 100% for young and middle generation to 60% for young and middle generation and 40% for senior citizens. This is one of the benefits of providing the rent option in which the government reforms and take cares the total population.

4.6.2 Summary of Thailand Housing Development Viewpoints in Thailand

Most of the commercial banks focus on providing housing loans to middle- and high-income households because they want to avoid the risk of payment default. Low-income households are often rejected for housing loans because they do not have an income statement. GHB and GSB are the two State Owned Enterprise banks supporting housing loans to low-income households. GHB allows low-income households to apply for housing loans by submitting formal receipts of housing rent for 12-24 consecutive months to present their ability to afford housing. In addition, many banks support rental housing construction loans with special

interest rates to private housing developers. They think rental units are booming, especially in the urban areas and around markets and education centers.

Home ownership is not the only solution to solve the existing problem of unsold units. Renting and buying help to upgrade well-being and the security of households. The new generation, especially the working generation in the urban area, tends to rent rather than buy. The government may support rental housing by using public land and property. The rental contract can be short-term or long-term depending on the household preference and housing condition. Rental housing would remain government property. The government can renovate or reconstruct for high density and set the new rental rates according to the surrounding conditions.

In addition, the government should encourage private participation such as PPPs to invest in housing and services for all households by giving financial incentives.

4.7 Discussion for Clearing Imbalance in Housing Market and Reducing Fiscal Burdens

The housing market in Thailand is growing gradually because Thai people, especially young families, are looking for better job opportunities in the city or new-growth industry areas. It is necessary for them to stay in stable housing. Senior citizens tend to be interested in remaining in familiar surroundings close to their network of friends rather than searching for new places to live. The typical Thai family size has changed from the extended family to the nuclear family, and mobility from the rural to the sub-urban and urban areas creates housing markets requiring housing loans and financing.

The government's investment in housing construction, housing services, and management especially investment in low-income housing will create more social benefit and upgrade the well-being of low-income households. When social benefits increase, this creates positive benefits for employment, consumption and economic development as a cycle. Private developers

also produce townhouses and single houses and sell at low prices, but low-income households still cannot buy them because the selling prices are beyond what they can afford.

Housing investment for the neediest residents results in a large budget expenditure, while the government has budget limits. The government needs to find appropriate funding sources or provide housing finance with less government budget.

4.7.1 Housing Subsidies

The government is the main agency dealing with housing for low-income households and has the responsibility to ensure adequate housing support, financial, legislative and information for the total population. This requires heavy subsidies which government cannot avoid because it is necessary for social welfare.

The government enables living in stable housing by giving consumer and producer subsidies. Consumer subsidies are given when the government wants to encourage people to rent or buy houses when excess housing supply exists. On the other hand, producer subsidies are given when government cannot provide, or has a limited capability to build housing to meet household needs. The objective of giving producer subsidies is to lower the rental rates or housing prices to reasonable levels that people can afford. However, the government should provide housing subsidy at less than 30% of the recipient household income, or let low-income households pay 10% to 15% of the rent.

The government constructs and sells flats to help low- and middle-income households stay in stable housing. The government uses standard quality materials, emphasizing strength and safety in order to respond to the basic needs of households. The government may use new housing construction technology such as knock-down and container houses. They are easily built, consume less construction time, cost and maintenance, but are durable.

In time of economic slowdown, the Non-Performing Loan (NPL) provides for those persons who would like to buy homes, but, cannot afford them due to their economic circumstances, such as being out of work. Therefore, the government has to play an important role in solving this problem.

Although the Thai government has subsidized public housing, NHA still has a large number of unsold public housing units. In order to eliminate the number of unsold low-cost public housing units, the government should provide consumer subsidies rather than producer subsidies. This may require a large budget but it will solve the problem of unsold units and create long-term government and social benefits. The consumer housing subsidies lead to much more effective use of the existing housing stock.

When they have surplus housing units, the governments of many countries stop construction, and instead concentrate on housing management, maintenance, and upgrading the existing property. However, government public housing investment will increase employment by hiring low-income people. When households have more income, the household consumption will increase that will lead to increase in investment and will be good for economic and social development.

As long as government assistance takes the form of interest rate subsidies on housing loans, it cannot reach the indigents because they may not be able to afford to buy houses. Therefore, home ownership encouragement or requiring people to buy houses may be not suitable for various reasons.

The government does not have to subsidize large sums of money for project management and operation as it receives increased revenue from other income groups who live in the same building or project. This will provide increased benefits to the government in terms of revenue, community participation and social development.

When markets are stable, the government should withdraw and encourage the market mechanism. The government needs to work and concentrate on other problems which require government solution or intervention

4.7.2 Housing Options

Requiring people to own houses that they cannot afford will create serious problems in the future, such as the default payments and the NPL. Therefore, people should start by renting public or private housing and accumulate financial assets. When they have sufficient resources, then they can buy.

The government decision that all housing units be allocated to only low-income groups may consume a large amount of the budget because the government receives less revenue and has to pay high operating costs. Therefore, the government should allow each income group or allow low-income and elderly households to rent or buy public housing at special rates within the same housing projects or buildings that are called socially mixed.

It is better to divide housing zones for rent and sale and efficient allocation. The government should set the proportion selection or arrangement of each income group clearly. Rent ceilings should be set in order to create fairness and equality. Renting and selling rates have to vary depending on household conditions.

Low-income group housing areas are good locations for many small-scale manufacturing and commercial enterprises such as cottage industries making garments or shoes, even though these may make small contributions to export trade. They result in employment of the lowest income groups and make significant contributions to local consumer demands (Patrick et al., 1989).

1) Renting and Hire-Purchase

The government of Thailand should understand that low-income households have minimal buying power because of their limited incomes. Therefore, the government should allow them to rent public housing. The government has to set ceilings of eligible household monthly incomes to classify the neediest households and create house access equality. The rental rates have to vary based on household incomes, family members, affordability, and ages. The difference in rental rates will help every household have stable living conditions and the capability to pay the rent.

When household income exceeds the ceiling, the family has to relocate. The vacant units will be allocated to the neediest households on the waiting list. Household income increases may present that household with the ability to afford improved housing. The government has to monitor renters' income regularly in order to keep public housing for the neediest low-income households and encourage well-off occupants to find more suitable housing in the private housing market. In addition, rental rates for low-income and elderly households should be classified appropriately. The government will allocate the vacant units to neediest households. However, if a household wants to continue staying, they have to pay 1.5-3 times the current rate, which may be close to the private rate.

The government should offer rental contracts of 10 years or more for households which currently do not have the capacity to buy, are not ready to settle in one place, or have high job mobility as in the case of Hong Kong. Later, it is would be possible for them to renew rental contract or change from renting to buying the current living units.

The government may allow each income group to reside in the same building, which is called socially mixed. The government may allocate around 30% of the rental unit for low-income households, 50% for middle-income households and 20% for elderly households. This

will eliminate unsold units, increase community participation and reduce high-crime areas because people in the community will take care of each other.

NHA not only has to provide housing for the Thai population, it also has to prepare rental housing for unskilled labor which comes to work in Thailand from Cambodia, Myanmar and Laos. If the Thai government does not provide enough residences for them, they may stay in the slum areas where they may contribute to various social problems.

2) Buying

The government should reduce the heavy subsidies and expenditures by home ownership promotion and private sector encouragement. Government needs to facilitate this transition by allowing private sector developers to participate in the process of land development and by removing regulatory bottlenecks. It should also monitor the performance of the housing sector using relevant indicators and make policy adjustments as necessary.

However, each household should be encouraged to survive on its own rather than to lean on the government (Schwerz, 1966). Home ownership promotion by the government is creating more benefits for individuals, the government, the economy and society than public or private rental housing (Forrest, 2004; La Grange & Pretorius, 1996).

Most countries emphasize home ownership promotion. However, the government has to consider carefully such factors as mobility, population trends and house affordability. In some area, renting may be a better decision than buying. The housing ladder is an appropriate concept that government has to aware of when it wants to promote home ownership. At the same time, the government has to promote household saving discipline. Saving accumulation can be used for buying a house in terms of down payment and installment payments. Households will perform better maintenance of their home because they know that saving to buy house requires discipline in spending.

Financial institutions do not want to take the risk of default payment. Therefore, they consider housing loan applicants strictly on income statements or associate assets. Many low-income households are rejected for housing loans. Hence, the government may promote home ownership by allowing households to use provident or pension funds for down payments and installments. For informal workers such as street vendors and temporary workers, the government has to coordinate with the financial institutions to allow informal workers to submit the consecutive rent receipts for 24 months to be able to buy a house. It will help informal workers to buy public housing.

4.7.3 Housing and Transportation Development

One of the problems for a large number of unsold BEA units is the inadequate and inefficient transportation system to and from the workplace. The transportation system is one of the most important factors for housing decisions. At the first stage of housing construction completion, the transportation system may not be well developed. Certainly, the first residence group may have difficulties in commuting from the housing project to the workplace in the city. It is therefore necessary to develop transportation systems and routes concurrent with housing development in order to prevent or reduce transportation times and cost and location problems.

When transportation systems are well developed, it helps to reduce transportation cost and time. A good example of this is Japan. The Japanese government provides efficient transportation, so people who reside in suburban areas can commute to work in the city easily with reduced time and reasonable costs.

Many countries such as Japan and Hong Kong have established New Towns by providing residences with employment opportunities, shopping, recreational and community facilities. The government must design and manage New Town systematically. This will increase employment

opportunities and create income in and around housing projects, reducing unsold units, migration problems and city congestion

4.7.4 Reducing Fiscal Burdens

Housing investment and transportation system development are important basic investments that the government must support. This requires large government budgets but may exceed the government's capability due to limited financing or inadequate funding. The government should encourage cooperation with individual households and private sector participation in terms of mixed-finance, such as PPPs, privatization, concessions and tax incentive in order to provide the basic investment and reduce government budget. PPPs bring efficiency in production and the marketing expertise of the private sector in terms of accountability and management. Privatization will provide benefits to the general subsidies and tax revenue. The level of participation varies based on government budgets and social benefits. Although PPP laws and regulations take a long time for consideration, the government has to work hard and push forward because it will create a long-term benefit for the government.

Mass housing unit construction firms such as Baan Pruksa and Baan BOI are the places for household accumulation. When many households stay together in a community, the housing value increases, which is one of the wealth accumulation methods and a trick of money externality. Governments can take care of residences easily because many people live in the same building. In addition, it saves on investment costs because all necessary facilities and utilities are installed only one time.

Public Private Participation in housing can be classified as:

1) Public and Private Sectors Cooperation

The land developer may have a large amount of unused lands which may be located in the suburban areas. An example of cooperation between the government and a land developer

is government-constructed rental housing or apartments on private land and rent collected as government revenue. Government does not pay rent to the land developer. At the same time, the government has to support infrastructure, facilities and transportation system development. On the other hand, private developers construct other facilities and employment opportunities such as markets, shopping malls or factories near the housing project. Both government and private construction will increase the housing demand in that area. The land development in the suburban area will increase continuously. This coordination gives many benefits to government and land developers. It will provide benefits for social and economic development, reduce city congestion, and upgrade the well-being of people.

2) Offering Concessions to Private Housing Developers

The government may have undeveloped lands and insufficient capability to construct mass housing units. The government may encourage private housing developers to develop public land in terms of public housing construction and give the rest of the land for other development. The government will maintain the residence and collect revenue from rental units. The rent will be decided by the government.

To promote of private sector participation, the government may provide some incentives such as giving the revenue of other land development expected from rental housing to private developers for 30-40 years. This incentive may attract the private sector because investors can use the remaining land around the housing project to create their businesses and receive the all revenue. However, the private sector still must pay income tax to the government.

3) Privatization

The government has many duties to complete. For housing, the government has to take care of all processes of public housing such as construction, housing services and management, and other problems. The government may privatize some part of their duties to the

private sector such as housing construction, housing services, maintenance and management. Private housing developers have more experience and expertise than the government, so they can better control the management of time and cost. The remaining governmental duties include collecting revenue from households, paying the management services to private developers and investing in other important projects.

Hiring the private sector may create more employment opportunities because private entrepreneurs need to hire workers to work in their business. Low-income households and unskilled workers will be the first group to benefit, because housing services such as cleaning, gardening and building renovation do not require high education levels.

4.8 Conclusion and Policy Implications

4.8.1 Conclusion

The government is the main agency dealing with housing for low-income households and has the responsibility to ensure adequate housing, financial conditions, legislative action and information for the total population. It requires a heavy subsidy which government cannot avoid because it is social welfare. Housing investment has a positive impact on society in terms of generating household income, especially for low-income households. Government intervention and subsidies in housing programs, especially for the low-income and elderly groups are necessary.

Government interventions in public housing programs are important in socio-political and economic considerations for formulating housing policies. Many governments intervene in housing for low-income households to provide balanced housing distribution and consumption and standard public housing. The government supports public housing to low-income households by setting rental rates which conform to low-income households' ability to pay. However, while giving housing subsidies, the government has to consider changing other factors such as

population structure, technology and expectation in order to strike the fiscal balance and avoid income inequality.

Although providing housing subsidies significantly increase government costs, it is needed for the social welfare. The government may try to find appropriate channels to maximize housing benefits for the population while spending less on subsidies.

Home ownership promotion will decrease the heavy government subsidies especially rent subsidies and the expense of public rental housing maintenance and management. In addition, encouraging people to reside in permanent standardized houses may create employment in or around the housing project.

Public rental housing is provided to the neediest families which cannot afford to buy a private house. It is the first set up the housing ladder toward a self-owned house. Therefore, public housing provision by the government plays a crucial role in subsidizing people whose housing needs cannot be met by the free market. The benefit of rental housing is the government can renovate and reconstruct in order to build high-rise buildings and increase population density because these buildings, which are government assets.

The government has to set the ceiling of household incomes in order to create equality by considering household income, family members and housing affordability. The rental rates have to be set clearly, based on household income and other factors. Furthermore, each household has to declare and report its income annually to the government. If the income exceeds the ceiling, the family has to relocate or pay higher rent, which may be close to the private rate. This will create social equality and reduce the fiscal budget of giving subsidies.

Changing housing policies from offering buying as the only option to rent or hire-purchase options will help to solve the problem of unsold units and promote stable living. It will provide benefit for people who cannot afford to buy or are not ready to settle in one place, such

as low-income and elderly households. In some areas, renting may be a better decision than buying. The housing ladder is an appropriate concept that the government has to make its people aware of when it wants to promote home ownership. At the same time, the government has to promote saving discipline to a ward home buying. Household savings can be used as down payment and installment payments for buying a house.

Allowing each income group to reside together in the same building or housing projects will help to eliminate unsold units, increase community participation and security and reduce crime in the area because the accumulation of households will increase the attraction of the project. Moreover, people in the community will take care of each other increasing social benefits.

Establishing New Towns with transportation system development, especially rapid mass transit, is very necessary for planning housing. The New Town would be constructed far from the city center. All new housing units will be built in the form of large-scale, high-rise and high-density estates for better use of public resources, integrating prototypes of various height and density to increase diversity. This mass production of flats creates employment opportunities that will be good for economic and social development and unused land development. Residents may not necessarily to commute to work in the city, but if residents want to go to the city center, it should take a short time at a reasonable cost.

Therefore, it cannot be concluded that renting, hire-purchase or buying are the best housing decisions that the government should promote because each household has different conditions and preferences. The most important responsibility of the government is to support people to stay in standardized houses which conform to what they can afford. Renting and buying rates should be considered and set clearly for promoting equal access to housing. It will decrease

the government's fiscal burden and enhance effective market mechanism, social development, improve the well-being of the population, and social problems will decrease.

4.8.2 Policy Implications

1) Clearing Imbalance in Housing Markets

Clearing the imbalance of housing units is the most important source of reducing current and future fiscal burdens. The possible solutions of reducing the number of unsold units are summarized in Table 4.5.

Table 4.5

<i>Clearing Imbalance in Public Low-Cost Housing Market</i>			
Housing Options	Income groups		
	Low	Medium	High
Purchasing	o	o	-
Hire-purchase	o	o	-
Renting	o	o	o

Source: Author's compilation

1.1) Purchasing

Sales promotion: the government may try to invite housing agents or private developers for fair auction. This will benefit the government by quickly clear the unsold units, and the housing agents may do housing promotion and persuade people to buy or rent. On the other hand, after winning the auction, the private developer may renovate unsold units and use them for other purposes such as shopping centers, buildings, healthcare centers, hotels or complex centers.

(i) Provide housing allowance such as cash grants or vouchers to the low-income and middle-low-income households who want to buy low-cost public housing. It will help people own houses by getting a discount from the government. However, if buyers cannot afford to pay installments, it will cause serious financial problems such as the default payment in the future. It will create NPLs that make greater problems for future housing development and investment.

Therefore, the government has to carefully to consider cash grants or voucher allocation to the applicant households. However, the public low-cost houses are already subsidized by government. Therefore, it is not necessary to provide a large amount of cash grants.

(ii) If people cannot afford to buy at present, such as low-income and middle-low-income households, the government may offer rent-to-buy or hire-purchase options to them. People would be allowed to buy the current rental units at special prices.

1.2) Renting

Because of economic changes, many people cannot buy houses. Although some people can afford to buy houses they do not want to. Many Thai people find new jobs for better wages, so they are not ready to settle in one place. Especially in the urban area, they prefer to rent because it allows for very easy moving. Currently, the rental market is growing. Sometimes the return from a rental residence is quite attractive. Therefore, the government should select some projects to be converted from rental residences in order to provide housing for renters who require mobility in their jobs. Rental rates should be differentiated based on household income, housing project location, and the facilities and utilities in the housing project.

In addition to offering rental housing to low-income households, the government may renovate some of the unsold units to be elder-friendly, to have healthcare facilities and services, and to persuade elderly households to rent at special rates.

The government may allocate some projects which have many unoccupied units or 30% of the building for rent. At the same time, the government has to improve the facilities and transportation in order to attract people to buy or rent houses.

For the Thai case, renting subsidies are not necessary to be paid in cash. The government may give rent subsidies by giving monthly rent discounts. In addition, rental subsidies and rental rates have to be set clearly and vary based on household income, family size,

dependency ratio, housing size and location. Moreover, the government has to set the ceiling of household income in order to create social equality.

Furthermore, each household has to declare and report their income annually to the government. If their income exceeds the ceiling, they have to relocate or have to pay higher rental rates that may approximate the private rate. The government will allocate the vacant units to the neediest households on the waiting list. This will create social equality and reduce the fiscal budget.

Renting contracts should be made between NHA and households which do not allow subleasing to other households and which prohibit for inheritance by their children.

2) Reducing Fiscal Burdens and Subsidies

Table 4.6

Public and Private Participation

Sector	Income groups		
	Low	Medium	High
Public	o	-	-
Public and Private	o	o	-
Private	-	o	o

Source: Author's compilation

To minimize the fiscal cost and maximize social service benefit, the government has to differentiate housing policy for different groups with different needs as presented in Table 4.6. The government may provide for low-income, middle-low-income and elderly households which require government subsidies. The private sector may not want to participate in housing for low-income households because they may gain less profit. Therefore, the private sector prefers to take care of middle- and high-income households which can afford housing.

If the government neglects to encourage private housing developers' participation in housing for low- and middle-low-income households, it may become a huge

fiscal burden for the government. Hence, the government has to introduce private sector participation.

2.1) Increasing private sector participation in:

(i) Public Private Partnerships) for new public housing construction, reconstruction, renovation and management. The private sector has considerable experience and expertise in project management. It uses advanced technology to minimize time and cost. Therefore, inviting private sector participation will benefit the government budget, increase good social management, employment opportunities and well-being for all. However, the government should consider the conditions of PPPs carefully to establish the best practice.

(ii) Long-term finance by giving incentives

The government may encourage private developer participation by offering tax exemptions, revenue during the concession period, or public land support by giving long-term leases at special rental rates. Involving the private sector and creating efficient management will be beneficial for the budget. Without public land subsidies, the private sector cannot sell houses at low-prices because land is one of the most expensive costs of construction. Therefore, public land subsidies will reduce the selling price.

2.2) Developing markets for mortgage security

Currently there is no protection regulation in Reverse Mortgage loans and the banks could easily change conditions that are not good for the elderly. Therefore, whenever the government finds a good market for the private sector, the government should also provide regulations, rules and laws. Both the demand and supply side can enter that market safely.

After that, the government can leave it to the private sector because the private sector can design Reverse Mortgage loans. That means the role of government is to ensure a properly functioning market. Therefore, the necessary laws, regulations and regulatory reforms

should be made. Those are less costly because the government just facilitates the market with legislation.

For the case of Thailand, the government needs to pass laws and regulations for Reverse Mortgage loans in order to create new market and deregulate to facilitate private sector participation in the existing market.

2.3) Public Guarantee System

Whenever the government finds a good market for the private sector, the government should also provide regulations, rules and laws. It is necessary to ensure that market is safe for private sector investment. The government may deregulate laws and regulations of private healthcare services establishments or allow the private sector to participate in public projects.

However, it is necessary to reform some laws and regulations that the government created to eliminate the current problems and provide smooth management for housing development.

2.4) Requiring housing developers to allocate some units for the underprivileged

The government needs to enact laws or regulations to allocate around 20% of total units in every building or housing project to low-income and elderly households. It will keep the social balance and equality and enhances interaction among residents. Low-income groups and other groups always stay side-by-side, so letting them live together will create a great social benefit in terms of slum clearance and increasing community participation. Moreover, young people may take care of elderly people who stay in the same building or housing project. Increasing social participation is one of the appropriate housing policies encouraging the community members to take care of each other, decreasing the fiscal burden of senior care.

2.5) Encouraging privatization of public housing maintenance and management by private developers. Private developers have more experience and expertise than the public sector. Therefore, if the government privatizes all services, it will help to reduce costs and create housing management efficiency.

2.6) Encouraging saving discipline or compulsory saving for preparing for housing finance in order to reduce default repayments and increases home ownership. Financial institutions have to set the new regulation for new home loans. Applicants have to deposit the same amount of money for 12-24 months and can use it for a down payment.

2.7) Transportation system, urban planning and housing development need to be improved urgently. Many related agencies have to participate and design a development strategy in order to resolve the land, transportation and location problem. Moreover, the government has to coordinate with the private sector for long-term investment. Public transportation usage promotion will reduce road congestion transportation costs and commute times.

2.8) Establishing New Towns is a complex undertaking. New Town establishment is one of the appropriate options for providing public housing for all especially low-income households. It should fulfill the residents' needs and include the necessary transportation systems, shopping areas, facilities, schools, employment opportunities, and other considerations.

2.9) The government should pay strict attention when promoting home ownership. The housing ladder is the appropriate step for home ownership. People should become home owners when they can afford the down payments and installment payments. If they are not ready to buy houses, they should stay in the rental housing until they have enough money to buy houses.

Public or social housing and housing subsidies should be allocated for the neediest low-income households. This will provide them with the opportunity to move away from slums

and improve their well-being. The government has to work as a regulator and to manage the existing rental units, to reduce subsidies, and to phase them out when the market functions well and household income increases.

Chapter 5

Conclusion and Policy Implications

5.1 Background and Significance of the Study

The United Nations' XXI Housing Policy Agenda emphasizes that each country should provide adequate housing for the entire population. Therefore, it is a duty for the government to establish and conduct housing policies in order to provide housing for the growing population. Housing is one of the most essential inputs to national development. It creates opportunities in economic, social, political, and civic development. Residential construction stimulates the economy directly, by generating jobs, wages, and tax revenues, and indirectly, by increasing the demand for goods and services created by new homes.

5.1.1 Public Low-Cost Housing and Fiscal Burden

Since 2003, the Thai government's National Housing Authority (NHA) has subsidized low-cost housing projects for low-income households called BEA. NHA offers only a purchase option, which prevents people from renting BEA units. As the selling price has been subsidized the government refuses to reduce the price of BEA housing.

There are many unsold BEA units. Two major problems are 1) low-income households being rejected for housing loans and 2) inadequate transportation systems from BEA housing projects to the urban area. In addition to the initial cost incurred from BEA construction, as the loan guarantor, NHA has had to buy some of the sold units and debt with interest back from banks. When the buyer defaults on repayment for three consecutive months, the bank repossesses the unit. Hence, it causes huge fiscal burdens.

5.1.2 Ageing Society

The ratio of elderly people in Thailand has increased by more than 10%, meaning that by 2005 it became an ageing society and it is expected to become an aged society in 2025, which will be a shorter time than it took Japan to become an aged society. Many elderly Thais reside in homes that are inappropriate for their physical limitations. These homes include many steps, curves and slippery floors. Falls and insufficient income are the main problems for the elderly.

The typical Thai family composition has changed in several ways. Traditionally multiple generations of a family lived in the same house. More recently, the nuclear or single family is becoming more dominant. Currently, many elderly Thai households are neglected by their children because the children have an obligation to take care of themselves and their families.

Although Thailand is in the first stages of the ageing society and elderly housing has not become a serious problem, the government has to play an important role for elderly housing management in order to prevent future problems. If the Thai government does not prepare well, the ageing population will become a serious issue and will also consume a large portion of the budget.

5.1.3 Government Intervention

The government is the main agency dealing with housing for low-income households and has the responsibility to ensure the supply of adequate housing, financial and, legislative support, and information for the total population. It requires a heavy subsidy which government cannot avoid because it is social welfare. Housing investment has a positive impact on society in terms of generating household income especially for low-income households. Government intervention and subsidies in housing programs, especially for the low-income and elderly groups, are necessary.

Government interventions in public housing programs are important in the socio-political and economic contexts of housing policy formation. Many governments intervene in housing for low-income households to provide balanced housing distribution and consumption and standard public housing. The government supports public housing to low-income households by setting the rental rates which conforms to low-income households' ability to pay. However, giving housing subsidies, the government has to consider the changes of other factors, such as population structure, technology and expectation in order to strike the fiscal balance and avoid income inequality.

5.1.4 Significance and Uniqueness

According to the future projection of the low-income group, its size will be very small and remain so. On the other hand, the number of elderly Thai people is increasing. Elderly people without adequate income could be one of the target groups requiring government care. The Thai government does not pay adequate attention to the elderly issue because it is a newly ageing society in the beginning stage. If low-income and elderly households require social benefits, the government has to subsidize them. Therefore, the study of low-income and elderly households should be of great interest and importance to the Thai government. It is the intent of this study to evaluate the needs of the low-income and the elderly and present these as a possible solution to the problems of the unsold BEA units.

The Thai government has been evaluating the Japanese elderly housing policy issue. To reduce unsold units, fiscal burdens and create an effective elderly housing management system, it is possible to adapt and use unsold public low-cost housing units for low-income and elderly people by learning from Japanese experiences. Japan became an ageing society more than 20 years ago and has a long history of development and successful management. Although

the respective countries have economic and social status differences, the Thai government can apply many lessons learned from the Japanese example.

Furthermore, it is necessary for Thailand to investigate overall housing policies and management from developed countries in order to learn from their difficulties, mistakes and successes. Studying the past successes and failures will help the Thai government prepare housing policies with less fiscal burdens.

Government intervention is mostly necessary in the housing market for the low-income and elderly groups. Two chapters of this dissertation have been devoted to evaluating the relationship between two groups and resolving the problem of unsold BEA units. Additional chapter provided case study comparisons between countries in order to investigate overall housing policies and management for reducing fiscal burdens.

5.2 Research Objectives

This study has attempted to find the solutions the issue of unsold public low-cost housing units and enhancing the well-being of low-income and elderly households. The objectives of this study were to 1) identify the factors affecting low and middle-income and elderly households' housing decisions, 2) compare and analyze Thailand's housing policy with those of developed countries, 3) resolve the imbalance of public low-cost housing problem, and 4) recommend housing options for sustainable housing development and reducing fiscal burdens.

5.3 Data

The scope of this study emphasized only the greater Bangkok area by collecting data from the sources listed below.

5.3.1 Primary data was collected in two parts:

1) First, 1,488 low- and middle-income households and 80 elderly households who currently live in the greater Bangkok area and attended Home Buyers' Expo were interviewed

following a questionnaire.

2) Second, focus groups and in-depth interviews were conducted nine times with housing-related agencies

5.3.2 Secondary data from documentary research such as journals, pamphlets, websites, academic papers and related research from government agencies, State Owned Enterprise, research institute and international study reports was used.

5.4 Methodology and Data Analysis

Logit analysis was used to analyze factors of housing decisions for low- and middle-income households. Statistical hypothesis testing (T-test and χ^2 test) on comparable means was used for analyzing factors affecting elderly households' housing decisions. Descriptive analysis was used to describe and explain housing policy comparisons between countries.

5.5 Results

5.5.1 Factors of Housing Decisions for Low, Middle-Income and Elderly Households

Both low- and middle-income households decide to buy houses by considering and emphasizing the same factors although in practice some middle-income households continue to rent even when their household income increases. The most important determining factors of the current buying-decision are the monthly housing payments, the social environment, the housing prices, and transportation costs, while the monthly housing payment is the most important for future buying. Transportation costs are the most important for future renting.

Both elderly renters and buyers have the same average mean score in most of factors for housing decisions. Renters are more sensitive to price, utilities, and facilities than buyers. It is necessary to provide safe housing and maintain or develop other related factors to support the elderly after retirement. Living in an elder-friendly house, and good environment will help to

decrease fiscal burdens in taking care of the elderly and maintaining the well-being of senior citizens.

However, judging from the highest mean score of buyers and renters, the most important factors are housing prices or rental rates and location. In addition, both groups put emphasis on the social environment, such as security, neighborhood and friendship as important factors in elderly housing decisions.

5.5.2 Elderly Housing Management

The Japanese government and private housing developers provide elder-friendly rental housing with adequate healthcare services to elderly households. The government tries to reduce its responsibility to supply sufficient rental housing to elderly households by encouraging private sector participation through financial incentives. The private sector provides Reverse Mortgage loans for high-income elderly people who are homeowners but have limited finances. The Japanese government provides not only public rental housing but also low-interest rates for home remodeling or expansion to accommodate the lifestyle of the elderly. Families are encouraged to live together enhancing family relationships and reducing fiscal burdens.

The rental costs of public housing will change in proportion to the elderly household income. Limitation based on household incomes will screen the neediest household to stay in public rental housing.

The Thai government takes care of low-income and disabled elderly people by supporting free public housing for 2,700 elderly people for throughout the country. This is not adequate, when considering that Thailand private housing developers support full services and complex home care only for high-income elderly households.

5.5.3 The Necessity of Government Housing Intervention and Reducing Fiscal Burdens

The market mechanism does not function well for low-cost public housing; therefore, a government housing intervention policy is needed in order to solve the problem of unsold units and create a sustainable society. The governments of many countries intervene in the housing market by giving consumer or producer subsidies in order to solve housing market problems.

The government supports its people by providing well-built public rental housing for its less advantaged people, particularly those with low incomes. The government should supply not only rental housing but also sufficient transportation systems and facilities nearby. This would help to eliminate the problem of public housing location. Moreover, government allows renters to buy the current rental units at special prices.

Most of the consumer subsidies that government provides are public rental housing, houses for sale at special discounts and housing transaction fees reduction. Conversely the government supports the house builder by providing land for housing development, deregulation and financial incentives.

The government attempts to coordinate with the private sector in housing development in order to minimize costs. When the market is stable, the government should withdraw and encourage the market to operate in its own. The government should work and concentrate on other problems which need solution or intervention by the government agencies.

In order to reduce the number of unsold low-cost public housing units in Thailand, the government should provide consumer subsidies rather than producer subsidies. This may require a large budget, but it will solve the problem of unsold units and create long-term benefits to government and society. Subsidizing consumer housing leads much more effective use of the existing housing stock.

5.6 Policy Implications

It is necessary for the Thai government to reform housing policies, laws and regulations. The appropriate housing policies for Thailand will be classified in terms of regulation reform and deregulation and the responsibility of public and private sectors in housing management. The government has to monitor and reform laws and regulations every three to five years in order to adjust and update policies for better management.

➤ Regulation reform

a) Change the existing housing policy from only selling low-cost housing to low-income households to include offering rent and hire-purchase options to low-income households by setting rent differentiation.

b) Allow elderly households to rent or purchase low-cost public housing which initially was offered only to low-income households.

➤ Deregulation

a) Allow private sector groups to operate housing businesses for each income group by relaxing laws and regulations when the appropriate quality and services standards are met.

b) Give financial incentives or special rates of land leases for encouraging private sector participation via Public Private Participations or purely private investment.

5.6.1 Clearing Imbalance in the Housing Market

1) Transportation System Management

To reduce congestion in the city and to solve the problem of housing location, especially in the sub-urban areas, the government has to provide effective transportation management in terms of routes and systems. Government may provide shuttle bus services from housing projects

to the nearest station, main road or shopping center. Although it may result in a negative return on investment, it is the necessary for housing development.

Residing in the city center is not essential providing the transportation system from sub-urban areas to the city is well operated. People can commute from home to frequently-visited areas easily. Good transportation management not only solves the problem of the unsold units, but provides for sub-urban development, saves transportation cost and time, helps to prevent the future problem of housing location and benefits for land development around housing projects.

Therefore, transportation system management is among the top priorities for housing development. Transportation system, urban planning and housing development need to be improved urgently. Many related agencies have to participate and develop the land, transportation and location in order to prevent problems. A good transportation system will directly increase housing demand. It will also provide a social environment and safety benefits which will be explained in the next part.

2) Social Environment and Safety

Every household wants to reside in safe homes and have good environments. The safety measures include adequate patrolling and CCTV. Decreasing the number of unsold units in each housing project will result in increased community safety. When many households stay together, it will reduce crimes because of better lighting. Increased community participation will provide a safe society and social environment and decrease the associated fiscal burdens. Safer environments may be created more easily following transportation system development.

A safe environment means not only social safety but also physical safety. Elderly people also want to live in safe places. Therefore, the government should allocate unsold flats that are renovated for elder-friendly living in terms of physical and environment safety, which are provided with ramps, lifts, doors, toilets, custodial and health care services.

3) Housing Options

Resolving the imbalance of housing units is the most important means of reducing current and future fiscal burdens. After providing a sufficient transportation system and safe housing and environments as suggested in 1) and 2), the government can solve the unsold units problem and reduce the fiscal burden by allocating the existing unsold units or building for purchasing, renting and hire-purchase.

Home ownership is not the only solution for solving the existing problem of unsold unit. Renting and buying help to improve the well-being and security of households. The new generation, especially those working in the urban areas, tends to rent rather than buy. The government may support rental housing by using public land and property. The rental contracts can be short-term or long-term depending on household preference and housing condition. Rental housing would remain government property. The government can renovate or reconstruct for high density residency and set the new rental rates according to surrounding conditions and future needs.

The possible solutions of reducing the number of unsold units are summarized in Table 5.1.

Table 5.1

Clearing Imbalance in the Public Low-Cost Housing Market

Housing Options	Income groups		
	Low	Medium	High
Purchasing	o	o	-
Hire-purchase	o	o	-
Renting	o	o	o

Source: Author's compilation

3.1) Purchasing

As discussed, one main problem with current unsold units is location. The government needs to resolve the location problem, as suggested earlier. After solving location problems, the government may sell housing to households which can afford the homes, especially low- and middle-income households. It is the most expeditious way to resolve the unsold unit problem. The results from field surveys indicate that both groups wish to buy houses and they can afford a housing price of less than two million Baht.

The government can provide housing allowances such as cash grants or vouchers to the low-income and middle-low-income households who want to buy public low-cost houses. This will help people own houses by receiving discounts from the government. However, the public low-cost houses are already subsidized by government. Therefore, it is not necessary to provide a large amount of cash grant. If buyers cannot afford to pay installments, the result will be serious financial problems such as the existing default payments problems. It will create a Non-Performing Loan problem that can endanger future housing development and investment. Therefore, the government has to carefully consider cash grants or vouchers allocations to the applicant households.

The elderly group has been shown to be a candidate for solving the problem of unsold units. The government should remodel the on-going housing projects or existing unsold units to accommodate the needs of the elderly. The government may sell reasonably-priced remodeled housing to middle- and high-income elderly households who wish to buy housing after retirement.

Furthermore, the government may invite housing agent or private developers for fair auction of the housing. This will be beneficial for the government to quickly rid itself of the unsold units, and to the housing agents who may undertake housing promotion and persuade

people to buy or rent. The conditions of this auction should be based on the rental agents' abilities to maximize services and benefits for society.

3.2) Renting

Because of economic changes, many people cannot buy houses. Although some people can afford to buy houses, they may not want to. Many Thai people look for new jobs for better pay, so they are not ready to settle in one place. Especially in the urban area, they prefer to rent because it facilitates moving.

Currently, the rental market is growing. Sometimes the return received from rental residence is quite attractive. Therefore, the government should select some projects and convert them to rental residences in order to provide housing for renters who tend to be mobile as required for their jobs.

The government of Thailand should understand that *low-income* households cannot afford to buy due their limited income. Therefore, the government should allow them to rent public housing. The government should set an eligible household monthly income ceiling to identify the neediest households and create house access equality.

Rental rates should be based on household income, family members, affordability, age, housing project location and the available facilities and housing project utilities. The difference in rental rates will enable each household to have stable living conditions and the capability to pay rent. Renting contracts should be made between NHA and households which prohibit subleasing to other households and making the housing inheritable by offspring.

Each household would be required to declare and report its annual income to the government to establish its eligibility. When household income increases to exceed the ceiling, that household has to relocate. The vacant units will be allocated to the neediest households on the waiting list. This would create the social benefits and reduce the government's budget.

However, should the family want to continue to live there, it would have to pay higher rent that may close to the private rate.

The government has to monitor renters' income regularly in order to keep public housing for the neediest households and encourage well-off occupants to find suitable houses in the private housing market.

In addition, the government needs to renovate the unsold units for elderly living to include senior-friendly conditions and provide sufficient health care facilities and services. The government should offer public rental housing for eligible elderly households at special rates. Priority should be given to elderly people to rent the units on the first and second floors of a building. The government may allow low-income and middle-low-income elderly households to stay in public rental housing by paying special rental rates based on their household income and the facilities and utilities in the housing project.

The government may allow each income group to reside in the same building which would make them socially mixed. The government may allocate around 30% of the rental units for low-income households, 50% for middle-income households and 20% for elderly households. At the same time the government has to improve facilities and transportation management to attract people to buy or rent houses. It will eliminate unsold units, increase community participation and reduce criminality because people in the community will take care of each other.

In addition providing houses for citizens, NHA may have to prepare rental housing for unskilled migrant workers such as Cambodian, Burmese and Laotian labors who come to work in Thailand. If the Thai government does not provide adequate residences for them, they may stay in slum areas where they may contribute to the associated social problems.

For Thailand, renting subsidies do not necessarily have to be in cash. The government may give rent subsidies by discounting the monthly rent. In addition, the rent subsidies and rental rates have to be clearly established and would vary based on household income, family size, dependency ratio, housing space and location. Moreover, the government has to set a household income ceiling in order to create social equality.

3.3) Hire-Purchase

Some people want to own houses but currently have some difficulties and, as a result, postpone buying. The government may offer rental contracts of ten years or more to households which currently do not have the capability to buy, are not ready to settle in one place or have high job mobility. Renters would have to pay monthly rent without default for a certain period. After fulfilling this payment plan, they could apply for housing credit from financial institutions, renew renting contracts or change from renting to buying their current units. This option may help households own a house when they are ready. Therefore, using the hire-purchase option can function as one method toward ownership.

4) Financial Assistance

4.1) Home Remodeling Loans

The government should consider remodeling consultation and loans with low-interest rates for elderly people or children who want to remodel houses to live with the elderly. This will help to encourage good family relationships and to create social connections not only within the family but also among the elderly in the community.

4.2) Reverse Mortgage Loans

Utilization of existing homes would bring many benefits. The government should give more consideration to Reverse Mortgage loans. Reverse Mortgage loans will help the elderly homeowner who has limited finances use home equity.

5) Encourage saving discipline or compulsory saving to prepare for housing finance to reduce or prevent the default repayment problem and increase home ownership.

6) New Town establishment is one of the appropriate options for providing public housing for all households especially low-income households. New Town is a complex concept. It requires that new communities be built and provided with residences, transportation systems, shopping centers, facilities, schools, employment opportunities, and other factors. It will help to solve the location problem and create land development in the sub-urban areas. Therefore, creating New Towns complete with the basic community requirements will help the government sell unsold units, create jobs and reduce city congestion.

5.6.2 Reducing Fiscal Burdens

1) The Responsibility of the Government

For those markets which do not easily attract private sector businesses, the government can either provide incentives to persuade private sector involvement or subsidize demands by households.

Government involvement regarding the high-income segment of society should be minimal. Regulations are required to ensure safe building practices are followed and quality materials are used, but little if any government financial support should be required or encouraged.

Table 5.2

<i>Public-Private Operation Matrix</i>			
Sector	Income groups		
	Low	Medium	High
Public	o	-	-
Public and Private	o	o	-
Private	-	o	o

Source: Author's compilation

To minimize the fiscal cost and maximize social service benefits, the government has to differentiate housing policy for different groups with different needs, as presented in Table 5.2. The government should provide for low-income, middle-low-income and elderly households which require government subsidies. The private sector may not want to participate in housing for low-income households because they may gain less profit. Therefore, the private sector prefers to provide for middle- and high-income households who can more easily afford housing.

Should the government neglects to encourage private housing developers' participation in housing for low- and middle-low-income households, this may become a huge fiscal burden. Hence, the government has to encourage private sector participation.

2) Increasing Private Sector Participations

2.1) Public Private Partnerships may be used for new public housing construction, reconstruction, renovation and management. In addition, the private sector can play a key role in providing health care services and facilities services for middle and high-income households.

The private sector has considerable experience and expertise in project management which is important for creating sustainable housing and social development. They use high technology to minimize time and cost. Increasing private sector participation not only improves social management, employment opportunity and well-being for all, but also lessens fiscal burdens.

For high-income households and high-income elderly households, the government does not need to provide housing and services. The government responsibility is to deregulate laws and regulations especially home care establishments and health care services while keeping the standard of housing and services. The private sector can create related businesses to support people in this group. However, the government should consider the conditions of PPPs to obtain

the best practices. Lastly, the government should work as the housing regulator when the market is sufficiently developed.

2.2) Long-Term Finances by Giving Incentives

The government may encourage the participation of private housing developers by offering tax exemptions, revenues during the concession period or public land support by giving long-term leases at special rates. Involving the private sector and creating efficiency in management will be beneficial for the fiscal budget. Without public land subsidies, the private sector cannot sell houses at low-prices because land is one of the most expensive costs of construction. Therefore, public land subsidies will aid in reducing the selling price.

3) Developing Markets for Mortgage Security

Currently, there is no protection regulation for Reverse Mortgage loans, and the banks could easily create conditions that are not beneficial to the elderly. Therefore, whenever the government identifies good markets for the private sector, the government should also provide regulations, rules and laws. In that way both the demand and supply side can enter that market safely.

After that, the government can leave it to the private sector, because the private sector can design Reverse Mortgage loans. That means the role of government is to ensure proper market functioning. Therefore, the necessary laws, regulations and regulatory reform should be undertaken. Those are less costly interventions, as the government simply facilitates the market with legislation.

For Thailand, the government is needed to reform laws and regulation for Reverse Mortgage loan in order to create a new market, and to deregulate to facilitate the existing markets to increase private sector participation.

4) Public Guarantee System

It is necessary to ensure that the market is safe for private sector investment. The government may deregulate laws and regulations of private healthcare services or allow the private sector to participate in public projects.

However, it is necessary to reform some of the existing laws and regulations that the government had previously developed in order to eliminate current problems and for smooth housing development management.

5) Forcing housing developers to allocate some units for the underprivileged

The government needs to enact laws or regulations to allocate around 20% of total units in each building or housing project for low-income and elderly households. This maintains the social balance and equality and encourages interaction between residents. The low-income group and other groups remain in close proximity, and letting them live together will create great social benefits in terms of slum clearance and increased community participation. Moreover, young people may take care of elderly people who stay in the same building or housing project. Increased social participation provides for enhanced community interaction, so the fiscal burden to take care of elderly people will decrease.

6) Privatization of public housing maintenance and management to private developers.

The private developer has more experience and expertise than the public sector. Therefore, if the government privatizes all services, it will help to reduce cost and create efficiency in housing management.

7) Home Ownership Promotion

The government should pay considerable attention when it wants to promote home ownership. The housing ladder is an appropriate step of home ownership. People should buy

houses only when they can pay the down payments and make installment payments. If they are not ready to buy, they should remain in rental housing until they have enough resources.

Public or social housing and housing subsidies should be allocated for the neediest low-income households. This will provide them with a chance to get out from slums and improve their well-being. The government needs to work as a regulator and to manage the existing rental units, to reduce subsidies and to phase them out when the market functions well and household income increases.

5.7 Limitation

To be specific, the establishment of New Towns and the reverse mortgage plan are complicated because they involve many agencies, financial benefits and risks. This study focuses only on solving the problem of unsold units by enhancing low-income household residency in public housing and introducing elderly participation in low-cost housing through government intervention and recommends housing options for low-income and elderly households. Therefore, the willingness to consider the establishment of New Towns and Reverse Mortgage are not within the range of this study.

5.8 Further Research

5.8.1 New Town Establishment with Transportation System Management

The government has to emphasize studying the establishment of New Towns. It is necessary to decrease city congestion, rural migration and sub-urban land development. Housing development and transportation system management are necessary for concurrent research.

5.8.2 Reverse Mortgage Loans Establishment

Establishing the Reverse Mortgage and developing the secondary housing market in Thailand will not be easy. The government has to pass new laws and regulations and coordinate with financial institutions, which takes time but is necessary. A strong financial infrastructure is

required to ensure the success of these products, including safeguards for borrowers against dishonest lenders, insurance to protect against inherently risk contracts, and a secondary market for the Reverse Mortgage loans.

5.8.3 Public Private Partnership

The government has to provide amenity such as regulations, rules and laws reform. It is necessary to encourage private sector investment. Increasing private sector participation in terms of PPPs and purely private investment will benefit the government budget, increase good social management, employment opportunities and well-being for all. However, the government should consider the conditions of PPPs carefully to establish the best practice.

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Appendix

The Importance Level of Factors for Housing Decisions

Factors	Objects	Score					Mean
		5	4	3	2	1	
1.Housing prices/renting rates	Buy	28	21	1	-	-	4.54
	Rent	24	6	-	-	-	4.80
2.Location	Buy	29	18	3	-	-	4.52
	Rent	26	13	1	-	-	4.50
3.Construction materials quality	Buy	29	19	2	-	-	4.54
	Rent	14	14	1	1	-	4.37
4.Security systems	Buy	26	19	5	-	-	4.42
	Rent	16	11	3	-	-	4.43
5.Housing type	Buy	21	20	9	-	-	4.24
	Rent	17	11	2	-	-	4.50
6.Transportation system	Buy	17	30	3	-	-	4.28
	Rent	14	14	2	-	-	4.40
7.Utilities and facilities	Buy	14	30	5	1	-	4.14
	Rent	14	14	2	-	-	4.40
8.Pollution	Buy	18	20	11	1	-	4.06
	Rent	12	16	2	-	-	4.33
9.Social environment	Buy	17	22	10	1	-	4.10
	Rent	8	20	2	-	-	4.20
10.Credit	Buy	17	24	8	1	-	4.10
	Rent	13	12	2	1	-	4.10
11.Infrastucture	Buy	12	24	13	-	2	3.94
	Rent	5	15	9	1	-	3.77

Remark: 5=the most important and 1=not at all important

Source: Author's computation based on questionnaire