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Beyond the demographic transition: The case of Japan

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BEYOND THE DEMOGRAPHIC TRANSITION:
THE CASE OF JAPAN

by

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Bachelor of Arts
University of Nevada, Las Vegas
2009

A thesis document submitted in partial fulfillment of
the requirements for the

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THE GRADUATE COLLEGE

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Mary Beth Horiai

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ABSTRACT

Beyond the Demographic Transition: The Case of Japan

by

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A combination of declining birthrates and increasing life expectancy in industrial countries has led to aging populations. In addition, more rapidly declining birth rates combined with only slowly increasing life spans has led to declining populations in some countries. These continuing demographic shifts are likely to be accompanied by economic, political and social changes. Japan is unique relative to other countries in four ways: 1) it has reached the condition of aging faster than any other industrialized country, 2) it has the highest life expectancy rate among major industrialized countries, 3) the proportion of elderly population (over 65) is the highest and 4) it has the highest projected population decline between now and 2050. None of these shifts augurs well for Japan's social, economic and political future. There are no easy solutions to these emerging problems. While population aging and decline are related issues, they create different dilemmas, such as a shrinking work force, total population decline and lack of necessary economic and societal infrastructure to support a larger elderly population and therefore each requires different solutions. This paper will attempt to answer which dilemma(s) the Japanese government, bureaucracies and businesses are focusing on and to what degree? This is accomplished by reviewing three types of responses: increased immigration, pro-natalist incentives, and the changing nature of the work force and

determining what responses are salient and show the most support by policy and that policies potential success. It is highly unlikely that Japan will attempt to deal with these challenges through increasing immigration, nor is it likely that the Japanese birth rate will substantially increase. A closer look then is made at the changing nature of the work force in Japan. In what ways is the labor force changing? How do these changes potentially affect family structure, gender roles and generational obligations? Japan is an important laboratory in which to study the effects of these demographic changes.

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Finally, I would like to dedicate this work to the aging population living in the Tohoku region of Japan who suffered great losses due to the earthquake and ensuing

tsunami in March of this year. This is specifically dedicated to my in-laws and all of their friends and relatives living in the town of Yamada in Iwate prefecture.

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CHAPTER 1

INTRODUCTION

Japan may be the first advanced economy to accept a “gentle decline” and settle into a “reasonably comfortable way of life,” with an inward focus due to the effects of population aging and decline (Tricks, 2010). This was not the intended post World War II direction of Japan, nor any other Western state. Although Japan has endured nearly two “lost decades,” demographic shifts, among other factors have situated Japan, as well as many other developed and developing countries in a position to consider a new social, political and economic paradigm. This paradigm is likely to involve adjusting directions of policy-making, redefining the nature of the workforce and changing social norms regarding gender, inter-generational relationships and family structures.

Japan is chosen for this single case study because it is unique, relative to other countries in four specific ways. First, it has reached the condition of aging faster than any other industrialized country. The population of 65 years and over has grown from 7 percent to 14 percent in 25 years, compared to France taking 115 years, Sweden 85 years and Canada 65 years (Komine and Kabe, 2009: 31). Second, Japan has the highest life expectancy rate among major industrialized countries. Japan’s average life expectancy rate is 82.25, with males and females at 78.96 and 85.72, respectively (CIA, 2011). Third, the proportion of elderly population (over 65) is the highest in Japan. As of 2009, 23 percent of Japan’s population was 65 years or older. And finally, Japan shows the highest percentage of potential decline between now and 2050 (Population Reference Bureau, 2010). These combined conditions have put Japan in a more urgent position to create and

implement policies and changes to mitigate the new challenges arising from these demographic shifts.

The relevance of this topic and the need for urgent coordinated attention within countries can be seen in plethora of recent articles and studies used in this paper. Numerous popular media articles and special issues also have been recently published. These articles all highlight the challenges facing declining and graying societies and future struggles maintaining global political, economic and social stability.

For example, global population aging and decline were topics featured in the first *Foreign Affairs* issue of 2010. Author Jack Goldstone warns that, “twenty-first century international security will depend less on how many people inhabit the world than on how the global population is composed and distributed” (2010: 31). *National Geographic’s* first publication of 2011 titles, *Population 7 Billion: How your world will change*, highlights this direction. The articles author explains how countries with growing elderly cohorts and diminishing overall populations pose more of a challenge than the concern for population growth. The population explosion was not even on the agenda of the most recent gathering of world demographers, being replaced by concerns of aging and decline (Kunzig, 2011: 61).

In several other articles the focus is on Japan. *Foreign Policy* covered the “Gray Menace,” and questioned whether Japan’s aging and declining population is good for the United States (Glosserman and Tsunoda, 2009). The November 2010 issue of the *Economist* reviewed Japan’s potential responses and claims that Japan could be “a test case of how big countries across the world should handle ageing and population decline” (Tricks, 2010: 3). Most recently, the spring 2011 edition of *Japan Spotlight* published by

the Japan Economic foundation is dedicated to Japan's "Aging Society" with most of the articles focusing on turning the challenges of aging societies into opportunities (Haraoka, 2011).

In the last two centuries many developed and developing countries have used economic power and growth as a way of defining progress. While not in all countries, some studies show that when certain conditions are present such as expenditures on education, higher investments and savings and adequate supporting policies, economic growth can be spurred by population growth (Headey and Hodge, 2009: 235-236).

Conversely, the momentum of population growth at times has created a concern for growing beyond the capacity to sustain societies within nature's physical limits.

However, as the industrial revolution progressed, developing countries began to follow a demographic pattern known as the demographic transition. Although early demographic transition theorist such as Warren Thompson, Adolphe Landry and A.M. Carr-Saunders separately speculated that populations would follow only three stages, later, it became evident that additional stages were needed to explain the continuation of declining fertility and mortality rates. What is not found in the literature was that the combination of ever-increasing life expectancy and continued falling fertility rates would manifest in population aging and decline. These conditions potentially create economic burdens, as well as political and social challenges that have no precedents.

Demographic transition theory is used to first question the new demographic stages of aging and decline that many countries are approaching and, second, to bring new understanding to the present body of knowledge regarding the relationship between developing societies and changes in fertility rates and life expectancy. The history of the

demographic transition has experienced many variations regarding the number of stages in its model, the factors or variables explaining the demographic movements, as well as its ability to make future projections. Gradual decline in birthrates and a historically lower life expectancy rate were used to project population stabilization. Instead, what occurred was severe decline in fertility rates and continued unexpected growth in life expectancy. There are three areas of focus in this study. The first area is a brief examination of the demographic transition, its evolution and present demographic conditions. A fifth stage is discussed based on a new timeline framework suggested by economists Komine and Kabe for Japan is used for this study and a few simple observations based on the collected data regarding the order of aging and decline of other countries will be set forth. The second area of focus is an overall examination of the problems facing a growing group of aging and shrinking populations, including and especially Japan. Attempts to respond to these challenges by Japan and other affected countries will be covered. Finally, Japan is then singled out for closer analyses. A narrow examination is made of three specific groups of responses: potential immigration responses, pro-natalist responses and the changing nature of the labor force through increased use of women, retirees and robots.

Research Questions

In this third area of focus, the nature of Japan's responses in dealing with the challenges of an aging and declining population is examined. While population aging and decline are related issues, they create different dilemmas, such as a shrinking work force, total population decline and lack of necessary economic and societal infrastructure to support a larger elderly population and therefore each requires different solutions or a

combination of solutions. In reviewing Japan's potential and actual responses, the first question is: which dilemma(s) is (are) the Japanese government, bureaucracies and business' focusing on and to what degree? This is answered first, by reviewing three types of responses: increased immigration, pro-natalist incentives, and the changing nature of the work force and then, by determining what responses are salient and show the most support by policy and that policies potential success. A closer look then is made at the changing nature of the work force in Japan. In what ways is the labor force changing? How do these changes potentially affect family structure, gender roles and generational obligations?

After briefly surveying the problems and analyzing the three types of responses, it appears that although the Japanese government has taken some steps toward increasing population, these measures are not likely to produce a substantial increase to combat population decline. According to the number and attempted purpose of the various laws passed in the last decade and a half, the government of Japan appears to focus more on solving labor and economic issues resulting from population aging and decline internally. The internal approach to decline is through pro-natalist measures, with little precedence of success from other countries. The internal change in the nature of labor will be approached by the technological diffusion of robotics, the utilization of a healthier, elderly society with longevity in life and work years, and a surplus of women. And finally, changes in the family structure, gender roles and generational obligations are expected.

Terms and Clarifications

While there are various ways to measure population growth, including birth rates and fertility rates this paper will refer to the total fertility rate (TFR). According to the Populations Reference Bureau, TFR is the average number of children that would be born to a woman by the time she ended childbearing if she were to pass through all her childbearing years conforming to the age-specific fertility rates of a given year (2010).

At times this paper will refer to a demographic dividend or bonus and a demographic onus. The former dividend or bonus is when the relative size of the productive-age population increases and the economic burden on this population is small. The economy is likely to be energized and this is called the stage of demographic bonus (Komine and Kabe, 2009: 25). It can be delivered through a number of mechanisms such as labor supply, savings and human capital (Bloom, Canning and Sevilla, 2003: 39). The demographic onus occurs as the proportion of the aging population grows and the labor force declines.

An old-age dependency ratio is the ratio of the population over 65 to the working age population (15-64). The ratios are presented as the number of dependents per 100 persons of working age. Komine and Kabe state that, “[a] country with a high dependency ratio can offset the demographic onus through immigration, while out-migration may dampen the demographic bonus of a country or even lead to a demographic onus (2009: 26).” In addition, the terms “graying” and “aging” will be used interchangeably.

Japan’s demographic challenges and potential responses share some similarities with some emerging Asian countries like South Korea, Taiwan and in some instances,

China. Historically, they share lasting war memories, which add to their sense of nationalism; coupled with xenophobia they could portray similar resistance to open immigration measures. Culturally, they share similar gender division of work and family roles, along with a history of multi-generational cohabitating and filial responsibility to the elderly. Economically, most of these Asian countries have achieved rapid economic growth through some form of statism combined with capitalism. Demographically, they experienced similar post-war baby booms, declining birthrates and are expected to follow suit with Japan with a growing aging population and eventual population decline. Although, typically the “tiger” economies refer to South Korea, Singapore, Hong Kong, and Taiwan, this paper will also consider China when referring to these Asian countries.

The concern for declining TFR is based on societies in which the TFR has dropped below the replacement rate of 2.1. The rate of 2.1 is considered the average amount of births per childbearing women necessary to maintain equilibrium in a population. In more developed societies this rate could be lower due to medical access and advances while in less developed societies it could range slightly higher. To date, the stabilization of fertility rates around the replacement level has not been achieved (Beckman and Aksu-Koc, 2009: 217).

While the American baby boom cohort begins to retire this year and economic, political and social challenges are expected to continue concerning a growing retirement population, the United States remains somewhat of an anomaly. This is primarily due to long-term immigration, which is often claimed to keep birthrates high leading to a forecast of continued overall population growth. The conditions in the US will be referred

to throughout this paper for perspective and comparison purposes. However, the US is often not yet among the most affected societies.

This paper treats Japan as a unitary actor, yet it is necessary to acknowledge the role of various isolated forces. Karel van Wolfen infers that Japan is lacking institutions such as religious groups, visible in the West, that provide alternative bases from which to challenge the elite. Although interest groups like farmers' co-operatives and workers' unions exist, according to van Wolfen they "have been absorbed by the system and harnessed to its own aim" (1989:51). Nonetheless, businesses, bureaucracies, unions and civil society have played a role in either pushing policy into existence or allowing by non-resistance.

Outline

The next chapter starts with a brief history of demographic transition theory and covers the transition from the concerns of a "population explosion" to a "population implosion." This discussion is followed by an examination of the two unaccounted for conditions in some of the original models of the demographic transition theory; ever-increasing life expectancy and persistent falling birth rates. Then, the sequence of demographic changes offered by Komine and Kabe to explain the order of Japanese demographic conditions will be used as the framework for the fifth stage of the demographic transition for other countries. The extent of graying and decline in affected regions including, Western Europe, Eastern Europe, Russia, and emerging Asian countries is presented.

Chapter three summarizes the economic, political and social challenges created by population graying and population decline in Japan and in other affected countries.

Chapter four reviews the various responses by states to attempt to meet the challenges laid out in chapter three. Chapter five returns to the specific questions regarding the direction that Japan will likely take in dealing with the challenges of an aging and declining population and the changing nature of the work force.

In the conclusion a review will be made of the various policies for the selected three groups of responses and an analysis of which dilemma(s) Japan focuses on and to what degree. Then a summary is presented of the ways in which the labor force is changing and an examination of how these changes potentially affects family structure, gender roles and generational obligations. Finally, an appraisal is made of the applicability, if any, of these responses to other countries facing similar situations.

CHAPTER 2

BEYOND THE DEMOGRAPHIC TRANSITION

Thomas Malthus was one of the first scholars to link political economy and demography in the late eighteenth century. His famous quote in *An Essay on the Principle of Population*, stating that “the power of population is indefinitely greater than the power in the earth to produce subsistence for man,” made clear his belief in the relationship between food and population growth (1798: 11). This began a concern for a population explosion based on the Malthusian belief that an increase in population is limited by the means of food-production and, consequently, an increase in food-production would result in increasing population. As Malthus examined a simultaneous, gradual increase in population and food supply over the period since the agricultural revolution, he forecasted a population explosion where the number of people would outpace their subsistence to survive.

Following Malthus’ footsteps, an American demographer, Warren Thompson, in 1929 constructed a model depicting three different types of population growth. A few years later, in 1934, Adolphe Landry came up with the same basic ideas and three stages of population development. Landry expanded on the explanations for declining fertility and mortality. Then in 1944, a third demographer, Frank Wallace Notestein, assisted the League of Nations in formulating the demographic transition theory (Kirk 1996, 361). The eventual model of population change became known as the demographic transition model, showing the expected fluctuations in birth and death rates in an industrialized or modernizing society as they relate to population growth. Countries undergo systemic changes over time based on economic growth and development.

The demographic transition model attempts to describe population change over time. It was originally composed of three stages. The first stage, often referred to as the pre-modern stage, represented a society with both high fertility and high mortality rates and a stable population. In the second stage, during which urbanizing and industrialization increases, mortality begins to decline, with little or no change in fertility, and there is a slight increase in population. As the population approaches the mature industrial stage, birthrates decline and the momentum allows the population to continue to grow. Demographers eventually started using a fourth stage to describe the post-industrial stabilization of population when both mortality and fertility declined. This paper looks beyond this fourth stage to a fifth stage of aging and decline.

There are many variables suspected to cause this transition. Some social scientists, such as Cigdem Kagitcibasi, model this transition around cultures and their transformations. Kagitcibasi's model of family change (MFC)¹ explains the demographic transition as moving from a rural context,² to families embedded in an urban context.³ Other social scientists model this transition around processes, as Dirk van de Kaa's and Ron Lesthaeghe's model of the second demographic transition (SDT) indicates. These authors agree that the first demographic transition's (FDT) three stages provide an adequate description valid worldwide. However, they felt a need to explain why

¹ Kagitcibasi's Model of Family Change (MFC) was developed to explain the Turkish patterns of family systems embedded in specific socio-ecological context (Bekman and Aksu-Koc 2009).

² Rural context includes extended patrilineal family systems, with wealth flowing from children to parents, higher fertility rates, low status of women, and a strong control of offspring (Ibid).

³ An urban context has more of a nuclear family system, with wealth-flowing from parents to children, lower fertility rates, increased status of women (better educated), and a decreased obedience in child-rearing (Ibid).

practically no society had stabilized its fertility rates around the replacement level. They attempt this by explaining that SDT is where families move to “higher order needs” (Maslow, 1954), further secularization, multiple life style options, and a rise in symmetry for gender roles, among other reasons. SDT, they predict, also witnesses a decrease in marrying and remarrying, an increase in divorces and cohabiting, further decline in overall fertility via postponement, and a definitive increase in childlessness (Bekman and Aksu-Koc 2009). This explanation appears to be the closest fit for the situation in Japan, as will be pointed out later.

Medical advances and access to better healthcare were obvious and welcome causes for decreases in mortality rates. It remains more difficult however to determine the cause of falling birthrates. A growing lack of consensus developed for the reasons behind decreasing birthrates. There have been multiple revisions of this theory in attempts to discern why fertility rates drop.⁴ Most notably, is Caldwell’s wealth-flows theory where typically agrarian societies consider children as laborers. Therefore, wealth flows from children (income) to parents. As a society industrializes and education for children becomes a major expense and concern, the wealth-flow reverses from parent to child, creating an economic disincentive to have children (Caldwell, 1982).

In addition to economic, cultural or social reasoning for falling fertility rates, institutional pressures, or lack of, have often been blamed. For example, government policies, such as China’s “one-child policy,” have often been used to explain the cause for low fertility, however, many other societies have experienced the same phenomenon

⁴ Other theories include: changes in determinants of parents demand for children theory or economic approach (Becker, 1960; Becker and Lewis, 1973; Becker and Barro, 1988); diffusion theory or “butterfly effect” (Bongaarts and Watkins, 1996).

without such policy. In addition, the lack of religious constraints or pressures has also been a consideration. However, predominantly Catholic countries such as Italy, Spain and France are not excluded from this drop in birthrates.

Arriving at a clear explanation of why fertility has declined is difficult. What is clear is the unprecedented change it is causing. Jay Weinstein's summary is helpful to understand the breadth of fertility decline:

Fertility decline, in historical perspective, is an unprecedented and dramatic demographic response to an equally dramatic revolution in the way people organize their lives. Demographic transition truly reflects social and cultural change. With the emergence of industrial society, low levels of fertility prevail for the first time in human existence in some populations (2010).

Weinstein sheds light on the difficulty of pinpointing causes as the task of isolating factors affecting the way people organize their lives across different political, economic and cultural backgrounds is daunting.

This paper does not take on the task of isolating the cause for fertility decline if there even is one cause, however, there are a few points that research has supported. Most studies claim some form of education for women is correlated with fertility rate decline (Bongaarts, 2003; Weinberger, 1987). This may include education on birth control issues, access to higher education or even just basic literacy for women. Economic factors are also often cited as causes (Bongaarts, 2003; Bollen, Glanville and Stecklov, 2007). This supports the previous statement as statistics show that there is a correlation between an increase in education and an increase in income (Bollen, Glanville and Stecklov, 2007).

Important for this paper are two consequences of falling fertility rates. The first consequence is that the average age of the population begins to rise resulting in an

eventual aging population. The second consequence is that as the older population eventually dies off, a total decline in the population will result (Sciubba, 2008).

Although the demographic transition model eased the Malthusian concern of over-reach of population growth, and pointed to the benefits of development and economic growth, the preceding challenges that have evolved may now be equally disconcerting.

From Explosion to Implosion

Paul Ehrlich is well known for bringing attention to rapid population growth over four decades ago when he stated, “[w]e must rapidly bring the world population under control, reducing the growth rate to zero or making it go negative” (Ehrlich, 1968: 131). His stance was unique for the times, and remains so that if voluntary measures of population control are unsuccessful then government controls should be administered in methods such as incentives for families to have two or fewer children, and easy access to all forms of birth control including abortions and sterilization. Around the same time, Garrett Hardin, in his essay, *The Tragedy of the Commons* as well as other environmentalists were reiterating Malthus’ concern for the carrying capacity of food and finite resources (1968). “Restraint” seemed to be the plea of these extremists.

In the decades following, many have scoffed at how wrong they were (Goldstone, 2010, Kirk, 1996). Not only has the human population not run out of food (aggregately), nor exhausted all its resources, but also, as this paper supports, the trend is now starting to reverse itself in many societies. The decline in birth rates did, however, start after the sounding of alarmists like Ehrlich and others. Whether the increase from 4 billion people, when *The Population Bomb* was published, to 7 billion by the end of this year, is considered an “explosion” is not for this paper to decide.

There were two unexpected conditions that neither the demographic transition theorists, nor the alarmists had counted on. These two conditions were the continued increase in life expectancy leading to population aging and continuing decline in fertility rates beyond the replacement rate, which can lead to total population decline. As mentioned earlier, lower mortality rates and longer life spans are largely attributed to advances in medicine and improved healthcare and sanitation. Admittedly, this does not always equate to higher life expectancy rates as in some advanced economies where health conditions due to fast food access and inactive life styles such as heart disease and diabetes are actually increasing. Many societies may not only experience large elderly population but if there is not enough attention to healthy life styles, these large populations will become ever more dependent on medical, financial and government support. The next section examines these two demographic conditions.

Increasing Life expectancy

Life expectancies are projected to grow considerably in the next four decades. The life expectancy at birth in Germany and the US is projected to grow from 78 years in 2010 to 83 years by 2050. In France, it is expected to grow from 81 to 87 years. But in Japan life expectancy is expected to grow from 81 years in 2010 to an astonishing 92 years by 2050 (England, 2002). A wide disparity still exists, however, with Angola and Afghanistan's rate still in the 30's and 40's and Japan along with 30 other countries with life expectancy over 80 (CIA, 2011). The latter is considered a positive condition, however, many of the retirement calculations and social support systems were built using assumptions based on a shorter life span scale. In industrial countries, people can now expect to live much longer healthy lives than they could decades ago. In 1950, for

example, a 65-year old woman in the United States, Canada, or Sweden could expect to live only 15 more years. By 2000, this had increased to 20 years. Had fertility rates not dropped so drastically, higher life expectancy would likely be a more welcomed advancement for those societies unprepared for the excess burden on the social security and pension systems.

Falling Birthrates

The drop in TFR is not uniform across the globe as well as within countries. India, like China, also established somewhat controversial policies in the 1970's. In India, sterilization programs led to dramatic reduction in birth rates overall. India, however, has a wide gap between regions. The southern coastal regions, where literacy rates are high, have lower fertility rates; some rates are as low as replacement level or lower. The northern states⁵ however, continue to maintain the reverse; high fertility rates and low literacy rates. In Brazil, a predominantly Catholic country, where the government never promoted family planning experienced birth rate drops. Changing cultural norms, through access to television is sometimes credited for contributing to these changes. After television was introduced in Brazil, province by province, birth rates plummeted soon after (Longman 2010). Regardless of causality, fertility rates are declining across the globe.

The Fifth Stage of Demographic Shifts

The possible fifth stage in the demographic transition is based on the sequence of demographic change forecast for Japan by the Japan Center for Economic Research. This

⁵ The northern states in the "Hindi Belt" region have much higher rates: Rajasthan at 4.5, Bihar at 4.6 and Uttar Pradesh at 5.2. The southern states of Kerala and Tamil Nadu have rates of 1.7 and 2.1 (Adlakha, 1997: 5).

stage has four conditions and starts first with a decline in TFR, which leads to an aging of society, followed by the shrinking of its work force and then ultimately resulting in total population decline (Komine and Kabe, 2009). The examination of countries that are experiencing aging and declining populations, virtually all have reached the first condition. Fertility rates in all the countries have dropped well below replacement level (see Table 2.1).

Extent of Graying

Although population aging affects nearly all the countries in the world, there are differentiations among regional, gender and age cohorts. The pace of population aging is faster in developing regions than in developed countries. The world is now a demographically divided world; the population of the industrialized “global north” is only growing at a meager 0.2 percent annually while population of the “global south” continues to grow at a hefty 1.4 percent (Population Reference Bureau, 2010). This differential growth continues to give rise to substantial and often troublesome migration from rapidly growing to more demographically stable areas of the world.

There is even an aging population within the elderly population. The fastest growing cohort within the aging population is 80 and older. Women constitute the majority of the cohort over 60, outnumbering men, globally, by 66 million (UNDESA, 2009).

The World Population Aging Report considers the process of population aging for the whole world. The report claims four major findings. First, aging is “unprecedented” in the history of humanity. Second, aging is “pervasive” in where nearly all countries of the world are affected. Third, aging is “profound.” The economic, political and social

Table 2.1 Total Fertility Rates

Column1	TFR 2010	Rank from the lowest	Above 13% Decline by 2050	Above17%Of Pop. 65+ 2009
Macao	0.90	1		
Hong Kong	1.04	2		
Singapore	1.10	3		
Taiwan	1.15	4		
Japan	1.20	5	*	*
S. Korea	1.22	6	*	
Lithuania	1.24	7	*	
Belarus	1.25	8	*	
Bosnia-Herz	1.26	9	*	
Ukraine	1.27	10	*	
Romania	1.27	10	*	
Moldova	1.28	11	*	
Poland	1.29	12	*	
Latvia	1.31	13	*	*
Italy	1.32	14		*
Greece	1.37	17		*
Serbia	1.39	18	*	*
Austria	1.39	18		*
Bulgaria	1.41	19	*	*
Russia	1.41	19	*	
Germany	1.42	20	*	*
Croatia	1.43	21	*	*
Estonia	1.43	21		*
Georgia	1.44	22	*	
Switzerland	1.46	24		*
Spain	1.47	25		*
Portugal	1.50	26		*
Belgium	1.65	35		*
Sweden	1.67	38		*
Finland	1.73	43		*
Denmark	1.74	44		*
France	1.97	64		*
Source: CIA World Factbook 2010				

impacts are extensive. Finally, aging is “enduring” and will continue as such as long as fertility and mortality rates remain low (UNDESA, 2009).

European countries have been among the first to experience graying societies. In addition to better healthcare, and sanitation systems, which lead to longer, healthier and in most cases wealthier lives, Europe has also experienced a steady drop in birthrates. The speed of this aging⁶ has been quite slow for most of Western Europe; France has taken over a century to reach this level, while countries like Sweden have taken around 85 years for this transition to occur. This is compared to a couple decades for countries like Japan and South Korea. Europe also reports a 25 percent decrease in marriages and an increase in cohabitation, along with a high number of abortions.⁷ The combination of greater life expectancy and sub-replacement level fertility rates, has directly contributed to population graying in Europe.

While some societies in the EU are in more advance stages of population graying, no society has escaped this phenomenon. Countries like Bulgaria and Germany, having the fewest number of young people, make it difficult to continue to fund pension and healthcare programs. On the other end, Italy and Germany have the largest elderly populations, which will also require building up the workforce as well as increased taxes and cuts in benefits for a growing elderly population.

The percentage of populations 65 and over in a hand-full of Eastern European countries has caught up with most of the aging Western European countries (see Table

⁶ The amount of time it takes for the percentage of the 65 and over population to grow from 7 percent to 14 percent.

⁷ According to the Catholic Human Rights Institute, “abortion, together with cancer, emerges as the leading cause of death in Europe, with 1.2 million abortions each year” (Golubiewski, 2008:1).

2.2). The Eastern European countries on the first two tables have followed the first two stages of the Komine and Kabe framework. They all have below replacement fertility rates and a growing aging society. According to the projected aged dependency ratio for 2050, the rest

Table 2.2 Graying v. Decline

% Population Decline (2050)		% of Population 65+ (2009)	
Japan	-25	Japan	23
Moldova	-24	Italy	20
Georgia	-23	Germany	20
Ukraine	-23	Greece	19
Bulgaria	-22	Sweden	18
Latvia	-20	Denmark	17
Bosnia-Herz	-20	Estonia	17
Serbia	-20	Finland	17
Russia	-18	Latvia	17
Lithuania	-18	Austria	17
Poland	-17	Belgium	17
Romania	-15	France	17
Croatia	-13	Switzerland	17
South Korea	-13	Bulgaria	17
Germany	-13	Croatia	17
Belarus	-13	Portugal	17
		Serbia	17
		Spain	17

Source: “2009 World Population Data Sheet.” Population Reference Bureau, 2009

of the Eastern European countries will face a situation equaling a little more than two workers for every retiree (see Table 2.3). It will take these countries considerably less time than their Western counterparts to achieve these demographic shifts, giving the state as well as individuals less time to prepare appropriate responses. However, countries such as India and China have not built up generous pension and healthcare entitlement programs, making it, on one hand easier for their elderly cohorts to expect less (Shapiro, 2008: 71-72).

Asia will experience serious challenges due to aging and declining populations yet with much less time to prepare. While in the United States it will take nearly 70 years for the percentage of the population 65 and over to double from 7 percent to 14 percent, in India, China and Indonesia, the world's three most populous countries, this doubling will occur in about 25 years. Thus nearly 25 percent of China's population will be over 65 by

Table 2.3 Age Dependency Ratios

Country	2010	2030	2050
East Asia	0.17	0.26	0.41
Japan	0.35	0.53	0.76
S. Korea	0.15	0.36	0.66
Singapore	0.14	0.46	0.6
Hong Kong	0.17	0.26	0.59
China	0.11	0.24	0.39
Western Europe	0.24	0.36	0.49
Italy	0.31	0.44	0.64
Germany	0.31	0.48	0.61
France	0.26	0.41	0.47
Switzerland	0.26	0.4	0.46
Eastern Europe	0.19	0.31	0.46
Russia	0.18	0.3	0.42
Belarus	0.19	0.29	0.45
Poland	0.19	0.35	0.54
Bosnia-Herz	0.2	0.35	0.55
Serbia	0.21	0.28	0.4
Romania	0.21	0.29	0.51
Ukraine	0.22	0.32	0.46
Hungary	0.24	0.32	0.47
Lithuania	0.24	0.35	0.46
Estonia	0.25	0.33	0.44
Latvia	0.25	0.33	0.47
Bulgaria	0.26	0.37	0.59
Croatia	0.26	0.39	0.52
United States	0.19	0.32	0.34
Source: United Nations Data June 18, 2009			

2050 while 20 percent of Indonesia will fall into this category. Globally, by 2050, half of all aged persons in the world will be concentrated in Asia. And most of these countries lack social safety nets for the elderly and are going to be severely challenged to meet the rapidly growing needs of the elderly while the percentage of the population in the labor force continues to shrink (Stone, 2010).

Several of the smaller Asian countries now have the lowest TFR (See Table 2.1). Although, Singapore, Taiwan and South Korea still hover around 10 percent of the population over 65, they also will face severe graying problems with a much shorter time frame to prepare (see Table 2.3). For example, it is projected that the population in France 65 and over will reach 20 percent by 2036, having taken 154 years to grow from 7 percent of the population. This same percentage growth will take South Korea a short 26 years to reach by 2026 (Kwon, 2009).

Although operating from a much stronger economic base than some of the Asian countries as well as some of the Eastern European countries, Japan will also face stiff challenges from this rapid graying due to the large portion of the population already over 65. By 2050 nearly 37 percent of the Japanese population is projected to fall into this category. This represents a jump from 17 percent at the turn of the century. Japan is unique in that of all the industrialized countries it leads in both graying and projected population decline (see Table 2.4).

The United States is somewhat of an anomaly, while the first “baby boomers” are set to start retiring in 2011, which will lead to a growing aging population and all its challenges, the continued influx of immigrants has not only filled the gap of workers but, also contributed to an above replacement level fertility rate. The total population is

expected to grow to 400 million by 2050. Due to the recent economic crisis, there are fewer jobs to be filled by immigrants and has consequently led to over a million immigrants from Mexico and elsewhere in Latin America returning home in the last two years. A Pew Hispanic Center study shows that the number of illegal immigrants thought to be entering the United States has declined from 850,000 in the early 2000s to around 300,000 people annually. Additionally, Mexico too will face the problems of a growing aging society very soon. Although there are nine youths for every elderly Mexican over 65, by 2050 that ratio is expected to equal one to one. Mexico has very few policies in place for the elderly leaving them to rely primarily on their families.

Table 2.4 Population Decline 2009-2050

Country	% Decline	2009**	2050**	%65+	TFR 2009
Japan	-25	127.6	95.2	23	1.4
Moldova	-24	4.1	3.1	10	1.3
Georgia	-23	4.6	3.5	15	1.4
Ukraine	-23	46	35.3	16	1.4
Bulgaria	-22	7.6	5.9	17	1.5
Latvia	-20	2.3	1.8	17	1.4
Bosnia-Herz	-20	3.8	3.1	14	1.2
Serbia	-20	7.3	5.9	17	1.4
Russia	-18	141.8	116.9	14	1.5
Lithuania	-18	3.3	2.7	16	1.5
Poland	-17	38.1	31.8	14	1.4
Romania	-15	21.5	18.1	15	1.3
Croatia	-13	4.4	3.8	17	1.5
S. Korea	-13	48.7	42.3	10	1.2
Germany	-13	82	71.4	20	1.3
Belarus	-13	9.7	8.4	14	1.4

*Countries with more than one million people

**Millions

Source: "2009 World Population Data Sheet." *Populations Reference Bureau*, 2009

All of these countries have or will soon experience a contraction of the labor force as indicated by table 2.3. At which time measures to counteract a shrinking work force become important. Options such as increased immigration or increasing the workforce from within becomes potentially attractive. The challenges surrounding these responses will be expanded on later.

Extent of Decline

Over the next decade and a half most advanced economies⁸ are expected to see their populations decline by several percent. Eastern European countries dominate the list of leading countries in decline (see Table 2.4). These declines could approach or exceed 20 percent of the current populations in Russia, Ukraine, and a few other Eastern European countries by 2050. Russia's aging and declining population is projected to fall from 141million people to below 130 million by 2025 (CIA , 2008).

Russia's situation is somewhat unique. Although Russia has moved through an industrialization period it also experienced a demographic shock with the break-up of the Soviet Union. In addition, there has been an unusual and severe increases in mortality rates, especially among working age males, and an extreme drop in fertility rates among females. One author fears that, without a viable workforce, and with massive reserves of oil, Russia might become an unbalanced petro-state (Lubin, 2010).

In addition to the increase in early deaths in males, primarily due to alcoholism, liver and heart disease and other issues related to heavy stress, there has also been an

⁸ The populations of the US, Canada, Australia, and a few other industrial states with relatively high immigration rates will continue to grow—the US by more than 40 million, Canada by 4.5 million, and Australia by more than 3 million (CIA , 2008).

increase in childhood illnesses of about 9.3 percent in the past decade. Twenty percent of children experience chronic illnesses; while over half of teenagers have reproductive health issues. According to Health Minister Tatyana Golikova, “More intense medical examinations of teenagers are planned to start from 2011 with the goal of examining their reproductive function and recommending individual medical courses, which would identify and treat reproduction problems.” She also highlighted the growing alcohol consumption and smoking habits among children (RIA Novosti, 2010: 1). In addition to Russia’s projected drop in population, the number of women in their prime child bearing years is expected to decrease by 55 percent (CIA, 2008). Overall, Russian deaths outnumbered births by nearly 50 percent since 1992 mostly due to poor diet, smoking, sedentary lifestyles and alcoholism (Goldstone, 2010).

Admittedly, there has not been a uniformed pattern as Komine and Kabe neatly demonstrate (2009). Although all the countries that are aging and declining have extremely low TFR, not all countries that are declining, particularly in Eastern Europe, are presently aging as compared to the western counterparts. The majority of Eastern European societies are experiencing the most population decline, however, these same countries are expected to converge with the levels of high aged dependency rates in the next couple of decades as Western Europe and Japan (Gavrilova and Gavrilov, 2009). Nonetheless, projections to 2050 show that across the board these countries will have to deal with a little more than two working-age people for every retiree (Table 2.3).

Population decline has been lead by Japan starting around 2005, however, South Korea and Taiwan are expected to see a decline in population in the next 15 years. While better prepared than China, India or Indonesia, these countries will have to act quickly to

deal with the challenges brought on by this rapid aging. Overall, South Korea, Singapore, Thailand and China will follow Japan's order of demographic changes (Komine and Kabe, 2009).

The challenges that both aging and declining populations will bring about will threaten economic, political and social systems.⁹ These consequences beg for a re-evaluation of economic, social, and political systems. Increased numbers of pensioners will require the re-evaluation of social security systems, the shortage of workers will need to be addressed, as well as improved infrastructure that will cater to the health and medical needs of a growing elderly population. In addition, the dependence on economic growth as the priority for societies to thrive will need to be re-examined.

Japan's Condition

Low fertility rates and high life expectancy have put Japan ahead on both the aging and declining fronts. There are many variables contributing to these rates. Regarding low fertility rates, these variables include the average age of first marriages, the growing percentage of unmarried men and women, the increased number of childless women, the timing of when women have their first child and the increase in spacing between children. Regarding high life expectancy, some of the factors are economic wealth, lifestyle choices, education, environment and access to quality health services.

Japan has the highest life expectancy rate among industrialized countries of 85.72 years for women and 78.96 for men. In addition, Japan's GDP per capita has remained even during two decades of almost no growth. Japan has a high level of literacy and

⁹ A report presented at the European Parliament in Brussels, titled "The Evolution of the Family in Europe 2008" warns of the catastrophic consequences of demographic decline (Golubiewski, 2008).

college graduates and according to the World Health Organization (WHO), ranks at the top regarding healthy longevity calculated by considering health and life expectancy (AORN, 2000). In addition to these generally positive statistics among the elderly, an interesting trend is developing among the younger generation.

According to Japan's Ministry of Health, Labour and Welfare, the mean age of first marriages for men and women in 1950, were 25.9 and 23.0; by 2008 they had increased to 30.2 and 28.5 respectively. The percentage of unmarried¹⁰ men and women between the ages of 30 and 34 has tripled and quadrupled respectively (Wakabayashi and Inada, 2009). The Japanese Bureau of Statistics at the Ministry of International Affairs and Communication reports, more than 54 percent of women in their thirties are single (Mori and Scarce, 2009). The percentage of permanent childless women has risen from 7 percent in 1970 to 18 percent in 2001. Also, women are waiting longer to have their first child as well as having wider spaces between children. If these factors, added to the 1.22 TFR continue unchanged, it has been calculated that the very last Japanese baby will be born in the year 2959 (Longman, 2010).

Due to these multiple changes affecting Japan's demographic situation, the country as a whole is being forced to face its changing future. The responses made by the Japanese government and its civil society might be helpful to upcoming graying and declining states by imitating successful responses or policies and avoiding unsuccessful ones.

The sequence of demographic shifts for the fifth stage of population aging and

¹⁰ Never married women ages 35-39 moved from 3 percent in 1950 to 14 percent in 2000. Men moved from 3 percent to 26 percent in that same age cohort and time period (Bekman and Aksu-Koc 2009).

decline being used as a framework for affected countries presents some consistency. All affected countries in Western Europe, Eastern Europe, and Asia have lower than replacement level birth rates. These same countries are expected to have levels of high aged dependency rates in the next couple of decades indicating a growing aging population as well as a shrinking of the workforce. Finally, a majority of the countries presented here are due to experience population decline. This consistent sequence is helpful as warnings to developing countries as they quickly approach these conditions. The next chapter is devoted to expanding the challenges that have developed due the demographic shifts described above.

CHAPTER 3

CHALLENGES

“The relative demographic weight of the world’s developed countries will drop by nearly 25 percent, shifting economic power to the developing nations” (Goldstone, 2010: 32)

Since the end of World War II, many industrialized countries benefited from their demographic bonus as a result of increases in births, known as “baby booms.” Although some developing countries often experience a “youth bulge” which can lead to high unemployment and civil unrest, these industrialized countries such as Japan, the United States and several Western European countries were able to grow their economies. An abundance of labor translated into economic growth. With a large and growing workforce entitlement programs theoretically had more contributions than deductions. Although there have been studies¹¹ done to suggest the opposite, growth in population is often considered necessary for economic growth. The challenges however, presently facing aging and declining populations are unprecedented and may call for major shifts on many levels. It is expected that these societies will experience a number of social, political and economic challenges due to these changing conditions.

This chapter reviews the various economic, political and social challenges created in aging and declining populations. Conditions in affected countries as well as Japan are discussed. The combined challenges create a starting point to evaluate potential responses in the following chapter.

¹¹ A Rockefeller Report found no convincing economic argument for continued national population growth. The health of the economy, the vitality of business and the welfare of the average person do not depend on population growth (The Center for Research on Population and Security, 1972).

Economic Challenges

The potential economic challenges that aging and declining populations will encounter are widespread, affecting the purses of the individual citizens as well as the public and private sectors. The “Great Recession” of 2008-2010 forcefully called attention to the wide variety of pension and health care obligations that have been building in OECD countries. The demographic and economic assumptions that originally supported the creation of these programs have been badly shaken by the combined economic recession and accelerating aging in these industrial societies.

The economic challenges include the imbalance of contributions from a country’s workforce to the demands of pension and healthcare system for the elderly retired population. With a declining number of workers to tax and an increasing number of elderly to fund, some combination of an increase in taxes or a cut in benefits will be necessary. As states take these measures, all workers can expect less income to spend and therefore less ability to save. As a nation’s individual savings decrease, so does its ability to invest domestically or participate in foreign direct investment (FDI) or official development assistance (ODA) expenditures, as well as the inability to fund needed research and development (R&D) projects. Changes in the public and the private sectors will be necessary. Changes in labor practices, such as infusing either low-waged migrants or elderly working beyond retirement, will affect wages, which will in turn affect individual savings. Finally, maintaining existing pension and healthcare systems will become a costly strain on governments. All these economic changes may be determined by top-down political actions, private sector decisions, as well as collective social shifts in individual lifestyles.

Taxes and Benefits

For many decades now, countries like Japan have been aware of the need to implement measures in dealing with the upcoming imbalances. Raising taxes, while benefiting retirees by keeping the pension systems afloat, creates a growing burden on workers. Likewise, cutting benefits creates a feeling to the elderly of being cheated of what was promised.

In Japan, some estimates have indicated that social security tax rates could increase to resemble France's high rates of over 30 percent (Jones, 1988: 969). Japan's social security is based on a "pay-as-you-go" system, where the working class supports the aged generation. The system is in dire need of reform as it puts the entire financial burden onto the working cohort. This is evidenced by Japan's future aged dependency ratio (see Table 2.3). Economists such as, Kazumasa Oguro, recommend a "pre-funding" system, which would involve some tax increase yet some of the burden would be shared by the retirees for the unfunded portions of their pensions (2011: 23; Shapiro, 2008: 70). Any change in taxes or benefits will likely involve a struggle between politicians and powerful ministries and any movement will depend on which generation's voice is stronger.

Declining savings and investments

Population aging and decline will likely lead to declines in household, private, government and national saving rates. In Japan, demographic factors have been isolated to account for 2-3 percent of a 9 percent decline in savings during the period of 1990-2000 (Braun, Ikeda and Joines, 2009: 291). This in turn will lead to the weakening of investments both private and public. Although some optimistic authors state that

borrowing from abroad can be a solution considering the current fiscal conditions of most economies, this may not be an option (Horioka, 2010: 46).

Shrinking Workforce

Compounding the growing aging population is the shrinking workforce. This situation is without historical precedent and will have a large effect on how fast countries grow and the capacities of their governments to meet the needs of tens of millions of new elderly people (Shapiro, 2008). The global age dependency ratio has declined from 12 to 9 potential workers per elderly person over 65 during the period from 1950 to 2009. It is projected to drop to 4 potential workers per elderly person over 65 by 2050. Furthermore, as we will see in Japan, the drop will be even more extreme. These expected drops would have important implications for social security schemes and pensions systems, which depend on even flows and often increasing flows of contributions in order to remain solvent.

The majority of social security systems were set up during a period of demographic bonus where the workforce was sizable enough to support the smaller elderly population. With growing proportions of populations being 65 and over the demographic base of what was originally defined as a demographic “pyramid” with a solid larger base supporting a diminishing upper group of elderly, has turned into what is now being termed a demographic “tree” or “kite” (See figure 3.1). The contributions from the workforce can no longer support the top-heavy weight of the elderly population.

The dilemma of a shrinking labor force is widespread. Germany and France have dealt with this over the last couple of decades by increasing immigrants into the

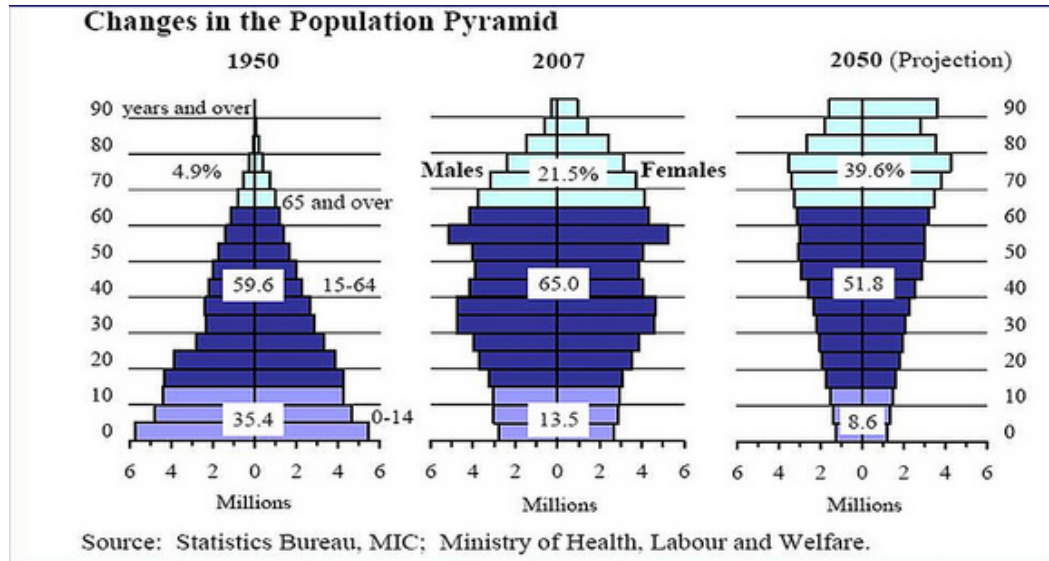


Figure 3.1 Japan Population Pyramid to Population Tree or Kite.

workforce. Much conflict has developed from this issue both in Germany and France mainly resulting from the majority of the immigrant population being unskilled workers and adding an additional financial burden on society. In contrast to the immigration system in the US and Europe, Australia and Canada have adopted a point system where immigrants are allowed entry based on their skills and education (Jacoby, 2011). A new struggle may develop as more and more advanced economies try to fill their labor shortages with skilled workers in this manner. Eventually, all developing states will experience a shrinking of their labor force in comparison to their dependent elderly population, as evidenced by the consistent change in both aged dependency ratio and the growing proportion of the population 65 and over (see Tables 2.3 and 2.4). Even China's workforce is projected to contract around 2020 (Shapiro, 2008:58). A Canadian specialist warns that, "This is not a remote or abstract crisis. Countries like Canada will soon be

fighting to attract anyone we can get to work – and squeezing as much as we can from the remaining few” (Saunders, 2010: 1).

Healthcare and Pension Costs

According to the bond-rating agency Standard & Poor’s, most western countries will spend between 27 and 30 percent of GDP on the needs of their retirees by 2050. This will lead to huge fiscal deficits near 25 percent of GDP and some warn it will “make the current crisis seem miniscule by comparison” (Saunders, 2010: 1). Most western countries are already struggling with how to compensate for the increase in healthcare costs and pension funds. Worse yet are the newly developing countries that lack any kind of existing infrastructure.

China’s mere population size increases the magnitude of welfare systems that need to be in place for this aging population. In China, only a very small percentage of workers have any social security benefits and these benefits are usually restricted to the military and the elite. China’s near absence of pension and healthcare systems in order to support such a large aging population increases its challenges to take care of the elderly while remaining a rapidly growing economy. China is now looking to increasing the retirement age an additional five years, as well as enrolling young rural workers into pension plans to build up public funds. However, China may see an increased rate of poverty amongst the elderly population within the next couple of decades.

Political challenges

George Magnus states that “Demographic change may not be the most widely publicized factor in voters priorities, but it is both a cause and effect of the changing political agenda” (2009: 111). The political challenges facing aging and declining

societies include potential decisions regarding immigration, security, global leadership, as well as domestic spending issues and increased urbanization.

France has felt the social and political strains as the costs soar to cover the expenses of the growing retiree cohort. France already has the largest percent of payroll tax¹² covering labor costs due to it having one of the world's most generous pension systems (Shapiro, 2008). France is among the states, which have used an open immigration policy in order to fill in the labor gap. There has been notable tension between French nationals and immigrant groups, primarily Muslim immigrants, leading to protests, riots and assimilation struggles. Integrated problems like these, which affect economic, political and social systems, are expected to increase in nearly all advanced states.

Immigration Resistance

Although globalization and all its related integration is considered a reality in most developed and developing countries, sovereignty and nationalism remain prominent in countries. Institutions like the United Nations suggest allowing large numbers of migrant workers from developing countries to assist developed societies with aging populations (Papademetriou and Hamilton, 2000). For various reasons such as, possible depletion of ethnicity, culture and language countries like France, Germany, Japan and the U.S. are resisting further influx of immigrants. This presents a political divide between the private sector that welcome the usually cheaper labor and the general public that demands assimilation. In addition, rising unemployment due to the current economic crisis only increases resistance.

¹² France's payroll tax accounts for 38 percent of labor costs, with Italy at 32 percent, Germany at 25, Britain at 17 and the United States at 14 percent (Shapiro, 2008: 58).

The United Nations has provided forecasts for member countries showing how many new immigrants would be needed to maintain their current pension and healthcare systems. In most countries the number of immigrants required would be overwhelmingly high. For example, presently there are around 2.2 million foreigners living in Japan, which is about 1.7 percent of the population. In comparison with France, with a nearly 10.2 percent immigrant population, and the United States, with nearly 13 percent, this is a relatively small number. But the United Nations has estimated that Japan would need to admit around 600,000 new working-age immigrants into the country every year between now and 2050 in order to prevent a decline in the working-age population (Papademetriou and Hamilton, 2000). If Japan were to follow this path, by 2050 more than a third of the population would be of non-Japanese origin. The exploration into Japan's resistance to increased immigration will be taken up further in chapter five.

Military and Security Issues

Typically, states depend on a large youth cohort to draw from to grow its military capabilities. In peacetime, among democratic nations this may not be as important. However, with a rise in terrorist acts, the changing dynamics in Northeast Asia and a global race for rapidly depleting energy resources, military capabilities may compete for a nation's financial support and challenge the funding needed for aging societies.

Japan's security challenges are uniquely strained for two reasons. First, there is grave concern regarding the growing nuclear capability of its somewhat unpredictable neighbor North Korea. The temptation for Japan's government to direct vast resources toward quickly building nuclear weapons is a possibility. Due to the cost of this build-up, massive neglect to Japan's domestic aging dilemma and the consequent funding needs

could result. Second, Japan is obligated, by Article 9, in its constitution, to refrain from building any military beyond its defense force, despite the concern that the U.S. may not be able to continue its full support as well as the potential threat of a rising China. If this agreement with the U.S. were to change, Japan would be left to an insufficient depleting youth cohort to try to build up its offensive military.

Global and Regional Leadership

Since World War II, many industrialized countries have benefited from their demographic bonus. With a growing workforce, resulting from the post- World War II “baby boom,” the US, France, Germany, Japan and others have been able to grow their economies. This is indicated by an increase in each state’s GDP, as well as an increase in the size of the middle class. These economic advantages have led these countries to positions of global leadership in various international institutions. As these leading countries experience a demographic onus of shrinking labor and overwhelming domestic commitments, the possibility for changes in global leadership capabilities could occur.

Regional integration is occurring with examples such as the EU and growing Northeast Asian coalitions especially in regards to climate change. The fiscal strain that aging populations place on countries, however, could restrict regional leadership capabilities. In addition, Northeast Asia countries still have deep imbedded resistance. This resistance is evident in recent border disputes, and some believe lies in old unresolved war scars, especially, among and between China, South and North Korea and Japan.

In the case of Japan, its reputation for protectionist practices in areas of trade, whaling and forestry has often been viewed as unfriendly to other countries. Japan has

consistently displayed its leadership voice and capabilities through the avenues of generous ODA, as well as on the private front through FDI and other monetary means. Strong private and government backed R&D successes specifically in areas of science and technology have also been a means for Japan to show its regional and global leadership capabilities. Japan has been a leader in many of these inter-governmental organizations (IGO), yet high deficits and fiscal pressures to address the aging issue, will become increasingly difficult to maintain global or even regional leadership through aid or technological transfer.

Generational spending

Many societies with aging populations experience political conflict in regard to where to allocate the already limited funds for social programs. Governments are torn between dedicating funds and programs to help the growing elderly population without neglecting the younger generation. This younger cohort will ideally be responsible for dealing with a country with both a growing aging population and a declining one as well. Attention to the younger generation in the form of better education and supportive social programs may be equally as necessary as the support for the elderly.

Japan presently spends proportionally more on programs for the elderly than on programs for the younger generation. Consequently, Japan has witnessed a rise in an ambiguous group labeled NEET¹³ (Not engaged in Employment, Education or Training), which constituted 847,000 in 2002 of the population aged 20-30, according to the results

¹³ This term originated in the United Kingdom to describe teenagers that were not in education, employment or training and typically came from low-income households and less educated (Genda, 2005).

of the governments Employment Status Survey (Genda, 2005). Two pieces of legislation have been developed in 2003 and 2004 to address this issue.

Increased Urbanization

According to the CIA, “if current trends persist, by 2025 about 57 percent of the world’s population will live in urban areas, up from about 50 percent today (CIA Global Trends Report, 2008: 23).” Many nations have around 60 percent of the population living in urban cities.¹⁴ Birth rates are lower in urban areas than in rural areas. Children are more of a liability as they are more expensive and not used as an extra set of work hands as in the rural setting. Women have more work opportunities that often are accompanied by pensions and other retirement-oriented financial support, which does not rely on having large numbers of children to finance retirement (Longman, 2010). Rural areas on the other hand, usually have two demographic burdens: a higher numbers of both children and elderly and a much smaller working population to support both (UNDESA, 2009).

Social Challenges

In addition to economic and political challenges, there are numerous potential social challenges as well. Some of these social challenges are an increased burden on women, greater expectations from a traditionally retired section of the population, new family roles and responsibilities within multiple generations, as well as shifts from government burden to sharing more of the burden with civil society and individual families.

¹⁴ Japan’s urbanization rate is 67 percent; China’s is 46 percent and projected to rise to 65 by 2030 (Chinadaily, 2010)

Gender

Women may feel the weight of the challenge of dealing with these demographic issues in the form of the “triple favor.” Many governments including Japan see the encouragement of educated non-working women back into the work force as a way to deal with the work force shortage, the diminishing contributions needed to uphold pension and healthcare systems, as well as boosting economic growth. Most western aging countries have also engaged in pro-natalist measures. Finally, the third favor that potentially will be asked of women is to share the burden of taking care of the elderly in the form of filial responsibility.

Multi-generational households have traditionally been common in many Asian homes, however, in recent decades partially due to urbanization an increase in nuclear families has occurred (Kumagai, 2008:11). More people are moving to urban areas for employment opportunities and most never return to their land of birth, leaving the parents to fend for themselves. In addition to the increase in nuclear families, China has an even more troubling phenomenon. As a result of China’s “one-child” policy nearly four decades ago, not only do China’s elderly have fewer descendants to serve as caregivers, the single children are now growing up in homes with “no siblings; no cousins; no uncles or aunts-only ancestors and descendants” (Eberstadt 2011: 10). These trends lead to more pressure on women that use to be relieved somewhat by relatives.

In order for one or any of these requests upon women to be met, support will need to be provided. Support in the form of equal wages, government or company-supported childcare, tax breaks and extended social programs.

Generational and Family Structure Issues

As displayed in France in the summer of 2010, resistance to changing conditions for retirees such as increasing the retirement age can be met with strong opposition. As of yet, the working class in Japan has not protested the increases that will incur in the form of higher social security taxes taken from salaries to support the retired generation. Inter-generational conflict could escalate as governments start to make necessary increases in taxes and cuts in pension benefits. Another social issue as mentioned above, will be the change in autonomy for younger generations. These changes will occur as single adults or nuclear families revert back to multi-generational living conditions, and more parents in need of assistance are unable to support themselves. This will lead to this younger generation losing some of their autonomy.

Other Challenges

There are other challenges that are economic, political and social in nature that are much more difficult to conceptualize any direct response to. These challenges are the extremely tight budgets that most countries are facing partially due to the present global economic crisis, the interconnected phenomena of globalization, and the lack of discourse and urgency among politicians to their constituencies about the true nature of these demographic conditions and the challenges that is created by them. As for Japan, there is the additional challenge of its intricate, complicated political system, where movement on these issues can be slowed, blocked or controlled by the inner workings of powerful bureaucracies. This paper acknowledges these problems here but admittedly these issues are too vast for the concern of this paper.

The challenges created by aging and declining populations are vast and interconnected. They span economic, political and social arenas. Economic challenges range from decisions made by governments to increase taxes and/or cut benefits to decisions on how to maintain solvent healthcare and pension plans. Shrinking workforces appears to be the biggest concern and has often been remedied by loosening immigration policy to attract migrant workers. Many countries such as Germany and France are experiencing resistance from civil society to continue this trend. Some countries may start looking internally to fill the labor gap with women and retirees, which will potentially lead to challenges regarding gender roles and family structure.

The review of these varied and integrated challenges that are expected, partially or fully due to demographic drivers indicate that responses are needed. It is also evident that there is no silver bullet, no one perfect response that will address all the challenges. The various responses as well as the consequent challenges and results are discussed in the next chapter.

CHAPTER 4

POTENTIAL RESPONSES

This chapter reviews the potential responses to the challenges stemming from aging and declining populations. First, there is a brief examination of the general economic responses governments typically implement. Then, three types of responses are discussed: immigration, pro-natalist policies and the changing nature of the workforce. Finally, an acknowledgement of a few extreme responses is made.

Economic Responses

Economic responses to population aging fall into three basic categories: raise taxes, cut retirement benefits, or continue to borrow funds of other states and from future generations (Shapiro, 2008). The first two choices put the burden of change on either the working or the elderly cohort (which is everyone eventually); the third choice is unsustainable, considering that aging populations eventually lead to declining population (see Table 2.4), which means a smaller tax base must support a larger elderly population and ever-increasing debt.

The suggestion of raising taxes or cutting benefits in any country by politicians is difficult. Some believe it is a necessity in dealing with population aging and decline. Many governments have raised taxes including Japan while the governments of France, Germany and Italy have little room for more increase (Shapiro, 2008: 58). Norwegian financial experts have recently recommended to its government a tax increase of 12 percent, needed to “counter the costs of the nations increasingly aging population” (Steinhovden, 2010: 1). Steinhovden also refers to a collaborated study by scholars at the University of Bergen and the University of Freiburg, which found that the more time that

passes, the larger the necessary increase. Israel presents evidence to this as Health Minister three years ago proposed a minor 0.3 percent increase to cover rising healthcare costs for its aging population to no avail. Israel's current Health Minister has made yet another similar proposal this time at 0.5 percent (AARP Global Network, 2011).

Immigration

Increasing immigration is another approach to dealing with graying and declining populations. Increased immigration brings double benefits. Immigrants tend to fit into the working-age cohort and they also typically have higher fertility rates in their countries of origin. But increased immigration is not seen by some to be an ideal solution for many countries because increased immigration is often associated with racial and ethnic tensions and fears that immigrants dilute the cultures of receiving countries with their recorded inability to assimilate (Bermingham, 2001).

Germany and France stand out as two countries with continued persistent difficulties with immigrants. Both countries have a growing aging population and Germany is projected to have the highest percentage of population decline among western European countries. Both countries have been responding to these demographic shifts with open immigration policies for decades.

France has been known for its integrated approach to immigration, with its goal of assimilation of all immigrants. France strongly urges its immigrants to leave all cultural and ethnic differences behind, once they become French citizens. This has often not been possible and sometimes causes unrest as witnessed by the Paris riots among Muslim youths in 2005.

Germany has tried the path of multiculturalism, specifically concerning its large Turkish immigrant population. However, the cleavage between the Muslim immigrants and the rest of the German population has been met with frustration as well as a huge economic loss. According to Udo Ulfkotte, a German security specialist, as of 2007 migrants have taken one billion euro more out of the German public funds than they have paid into the system, while the present German debt is 1.7 billion euro. Some critics blame the lack of integration on the fact that parts of the Koran restrict against it, which makes it difficult to educate a population when they are trained to refuse to be taught by infidels (Anonymous, 2010). Author, Thilo Sarrazin's book argues, "that immigrants are destroying Germany" (Jacoby, 2011:1). Political leaders in Germany have denounced the book, as they are fully aware of Germany's growing need for workers. The problem that Germany faces is the lack of "skilled" laborers, that are likely not to drain public funds as much as "unskilled" laborers. The German government is torn between the growing shortage in the workforce and the growing tension regarding immigrants. Germany's leadership voiced the frustration when Angela Merkel announced recently that multiculturalism in Germany had "utterly failed" (Chrisafis, 2010: 1).

Many other states have opened their borders to working immigrants in order to fill the labor gap. Immigration however, has several drawbacks. First, immigrants, themselves eventually age, contributing to the raise in the aging population. Second, even if immigrants come from a country with a higher than replacement level fertility rate, data shows that they tend to converge with the fertility rates of the country entered, within a generation or two (BBC, 2006; Magnus, 2009: 256).

While Europe as well as the United States has historically filled this labor gap with increased immigration, most of these countries are experiencing increased racial and ethnic tensions due to lack of assimilation, economic downturn and a rise in unemployment. Some states may become motivated to concentrate more within its population to increase workers than to continue looking to immigrants.

Pro-natalist Response

It won't be easy to reverse the demographic momentum that is leading to population aging and decline. The "population bomb" fizzled when couples discovered that having fewer children led to a better quality of life. There are unfortunately no similar natural incentives that would encourage people to have more children in declining countries. Some countries have created economic incentives, direct cash payments or tax breaks, for those willing to have additional children.

France's first policy named the *Code de la Famille*, passed in 1939, banned the sale of contraceptives, provided subsidized holidays and offered cash incentives to mothers to stay at home with their children. The more recent pro-natalist policies in France include preferential access to government housing, heavily subsidized childcare and tax benefits, and up to 40 weeks maternity leave at nearly full pay for mothers having a third child (Kennedy, 2010). More recently, Sweden has been known for a more round-about way of trying to stimulate birth rates by stressing gender equality and providing a mixed package of higher pay for women, more flexible work-hours for both parents and high quality childcare.

These types of government efforts have not always had the desired effects due to significant pressures moving in the opposite direction. An increase in education and

career opportunities for women, increased access to birth control and abortion, and a significant decrease¹⁵ in marriages have combined to cut fertility rates considerably. In addition, abortions have increased in Europe to 1.2 million abortions each year (Golubiewski 2008).

In Russia, president Putin as well as president Medvedev has supported extensive measures to increase fertility rates within the last decade. These measures range from support for foster families, the development of preschool education, the promotion of healthy lifestyles and incentive payments for second births. The hope is that the opening of more family kindergartens and pre-school facilities will spur the birthrate by 4-5 percent as well as create jobs. Most recently was a proposed measure to reward families with three or more children, with tax breaks and plots of land to build a home. On the regional level, some creative incentives have taken place. In Ulyanovsk, a town famous for being the birthplace of Vladimir Lenin, September 12th was declared as the Day of Conception and for the third year running is giving couples time off from work to procreate. Cash incentives and Russian-made SUV's were given away to citizens who gave birth nine months later on Russia's National holiday. The result of the policies implemented in Ulyanovsk produced 46 more babies the first year and 78 more babies, the second year (MSNBC, 2007). The government has presented increased births as a patriotic act and even show posters depicting a young woman with three babies with captions stating, "Love for your nation starts with love for family" (RIA Novosti, 2010: 2).

South Korea had an overly successful family planning campaign to reduce

¹⁵ Europe has experienced 25 percent decrease in marriages (Golubiewski, 2008).

women's unwanted births a couple of decades ago, when the TFR exceeded 6.0 and is now feeling the demographic pains. At that time the South Korean government felt that the campaign was seen as essential for economic growth and modernization to be achieved. Now that it is achieved, the plans have been reversed with the new Saero-Maji ("new beginning") Plan. The plan's extensive measures include tax incentives, priority for purchasing new apartments, an increase in childcare facilities by 30 percent, as well as childcare facilities at work. It also included support for childcare, support for education, and assistance to infertile couples. South Korea's goal is to raise the fertility rate from 1.2 to a mere 1.6 by 2020. Surveys show however, that only 65 percent of married women feel a need for children, dropping from 90 percent just eight years earlier.¹⁶ According to Carl Haub, senior demographer at the Population Reference Bureau, Korean women do express a desire for two children but with little effect on actual fertility. In addition to married women, 49 percent of single women are reluctant to get married (Haub, 2010). It remains to be seen if policies to raise fertility rates will be as successful as the policies to decrease the same rates were a couple decades ago.

Changing Nature of the Labor Force

Considering the challenges of an ever increasing immigrant population and the generations needed to increase a workforce through pro-natalist measures, some countries are attempting to reach within their populations for solutions. The un-tapped resources of both the younger, healthier retiree population and the non-working female population have attracted attention from many governments. In most industrialized countries a good proportion of the retiree community could feasible still be productive workers and

¹⁶ Taken from a survey called "The Basic Plan on Aging Society and Population of Korea" (Korean Ministry for Health, Welfare, and Family Affairs, 2010).

therefore, aid the challenge simultaneously, in two ways. First, they add numbers to the workforce, which increases needed contributions into the pension and healthcare systems. Second, they postpone drawing on retirement benefits, which adds some longevity to pension funds.

In many societies, a good portion of women, traditionally are either periodic part-time workers or unemployed due to family obligations. Many governments are now turning to women for the “triple favor,” asking them to not only help in taking care of the growing elderly population and have more children, but also to join the workforce. The following sections provide an overview of how these two groups are being encouraged to boost the numbers in the workforce.

Increase women in workforce

In many countries women, for a variety of reasons, some cultural, economical and personal, are not a permanent part of the full-time work force. There are many challenges still remaining in advanced economies regarding gender equality in the workforce as well as the logistics of who will tend to the children and elderly. Many states have proposed piecemeal legislation to increase gender equality or to provide subsidized childcare. The Korean government has gone as far as to enforce a family-friendly corporate certification system in 2008. Many corporations have made efforts such as providing child-care facilities, offering flexible work hours, and permitting tele working from home (Chung, 2010). Magnus quotes that, “a modern economy will need to include people with a wider mix of skills, more career changes, more options such as flexible hours and extended phases of work into full retirement (2009: 55).

Many in Japan believe that it’s “greatest hopes for an increase in its workforce are

pinned on the utilization of the potential female labor force (Komine and Kabe, 2009: 29).” Japan has the lowest percentage of working mothers at 30 percent, compared to the United States at 54 percent, and the Netherlands at 73 percent, thus processing the largest surplus to draw from. The reason for this low percentage is mainly due to the cultural dictates on choices for Japanese women. Many women feel they have to choose between a family and a career, even if they want both. Japan also lacks the proper infrastructure to allow women to do both. In Japan, there is childcare available to only 20 percent of the women who need it, with well over 20,000 families on waiting lists (Price, 2010).

Increase retirement age

The “Great Recession” of 2008-2010 focused attention on the rapidly growing “retirement gap.” As economic growth stopped and unemployment increased, it became obvious that the generous assumptions underlying public and private pension systems in industrial countries were faulty, and some politicians attempted to begin to deal with the problem. Thus, in France, a country (in) famous for its 35-hour work-week, long vacations and early retirement age, an attempt in 2010 to increase the retirement age a mere two years, from 60 to only 62 was met with massive demonstrations. At present, in France the payroll tax supporting this system accounts for 38 percent of the labor costs (Shapiro, 2008). Other European countries face similar, although somewhat less extreme, challenges.

As previously noted, although, dealing with the issue through retirement policy changes, has been met with resistance, the situation may be somewhat mitigated, since forecasts based solely on chronological age don’t take account of the fact that “disability-free” life expectancy is also steadily increasing. Thus, 65 year olds in industrial countries

can now expect to live much longer than they did decades ago. In 1950 a 65-year old woman in the United States, Canada, or Sweden could expect to live only 15 more years. By 2000, this had increased to 20 years. In addition, people 65 and older are now more likely to be free of disabilities that would keep them from working. While some studies show that the overall health of the elderly in the United States has reason for concern¹⁷, other studies have shown that, for example, in the 65-74 age group 14.2 percent were disabled in 1982 while only 8.9 percent were disabled in 2004-2005 (Sanderson and Scherbov, 2010).

Thus, although there will still be stiff political resistance in industrial countries to increasing retirement ages in the future, there will be a larger pool of able-bodied senior citizens from which labor forces can be drawn. And the costs of medical care for this group of “near aged” likely will drop. In the United States for example, if legislation were to be passed increasing the retirement age one-half year for every year of additional life expectancy at age 65, pressure on the Social Security system would be reduced substantially (Sanderson and Scherbov, 2010). A similar situation would exist in other countries.

Since many governments have started contemplating policies to encourage increasing the retirement age, social adjustments necessary to ease the transformation into an older workforce will be necessary. Some of the needed changes for these adjustments are equity in the workplace considering limited physical ability of elderly workers

¹⁷ A Rand Corp. study published in Health Affairs states that more than 40 percent of Americans ages 50 to 64 already have difficulties performing ordinary activities of daily life, such as walking a quarter mile or climbing 10 steps without resting -- a substantial rise from just 10 years ago (Longman, 2010: 7).

compared to younger ones, flexible working hours, continued education to keep skills more equal between generations, and finding an equitable pay scale taking skills and experience into consideration. Ironically, according to the United Nations, “older persons remain economically active for longer in less developed regions because of the limited coverage of pension programs and relatively small incomes” (UNDESA, 2010: xxix).

According to the European Union, Europe views aging not just as a challenge to the job market and the social and health systems, but also as a social and economic opportunity. The European Commission adopted a European Action Plan for “Ageing Well in the Information Society.” This Action Plan targets improving the life of older people at home, in the workplace and in society in general. These initiatives will not only fund research and development but will aim to provide low cost communications and online services that can support the needs of the elderly¹⁸ in merging into an information society. By boosting technological skills, an increase in the number of elderly who will extend their work-life beyond retirement age could be realized. However, if the protest in France last summer over a mere two year increase in retirement age from 60 to 62 is any indication of the potential resistance that other EU countries may have, then keeping the elderly in the workforce, may be difficult.

While increasing the retirement age is not unique, civil society in Japan is not likely to organize and demonstrate against such an attempt as was witnessed in France recently over an additional two years of work. In 1994, legislation was passed in Japan to gradually increase the pension age from 60 to 65 starting in 2001 and ending in 2013 and

¹⁸ Only 10 percent of older people use the Internet. Severe vision, hearing or dexterity problems, frustrate many older peoples' efforts (21 percent of population over 50) to engage in the information society (Anonymous, 2007).

2018 for men and women respectively. There was no protest witnessed.

Robotics

Robotics is another force that is projected to change the nature of the workforce. While many Western countries such as Germany and the US do engage in robotic research and development, the leader in robotic technology is Japan. The various aspects of how robotics will affect the workforce will be expanded in the next chapter on Japan's responses.

Extreme responses

Thus far, the suggested responses have been considerable, however, it may be helpful to also examine a few extreme responses such as the return of Diaspora populations, elderly emigration and euthanasia. Although all three of these would be suggestions and be ultimately up to the individual, in the absence of convincing incentives, other forms of persuasion would border on intrusion of individual rights. Therefore, a gentle examination will follow.

Diaspora Return

Diasporas are groups or individuals who choose, or are sometimes forced to live outside their ethnic homeland. Japan has a surplus of potential workers that make up its Diaspora, equaling approximately 2.6 million worldwide; relatively small, compared to China's nearly 40 million. However, that number more than equals the present immigrant population in Japan and could potentially boost a shrinking workforce, were it possible to lure these nationals back to Japan.

There are typically two types diasporic returns. The first type consists of first generation nationals who move back to their place of birth. The second type is made up

of later generation descendants who may return to the land of their ancestral origin (Tsuda, 2009: 1). Japan has already attempted to lure this second type of Diaspora with little success.

In the 1980's when Japan's manufacturing industry was booming the government approved a temporary workers program open to *nikkeijin* (people of Japanese descent), primarily from Brazil. This replacement immigration is what many countries, such as France, Germany and the U.S., have tried when working population starts to shrink. In addition to a shrinking workforce, many advanced economies experience an increase of available jobs that educated workers will not do, which increases the labor shortage (Harris 2002). In Japan, this phenomenon is called the "three K's" - *kitanai, kitsui and kiken* (or the three D's in English-dirty, difficult and dangerous). These are the types of jobs that educated workers tend to avoid (Harris, 2002; Pang, 2000). Typically, these positions are occupied by immigrant workers, as is the case in Japan, Spain, Germany, France and the United States.

Motivation for diasporic returns are predominantly economic pressures (push) or economic opportunity (pull) as well as ethnic ties (Tsuda, 2009a: 21). Economic opportunity was the pull factor for over 190,000 Brazilian *nikkeijin* in the 1980's. This program unfortunately was a failure once unemployment began to rise and the workers were not needed anymore. It ended in payments being made to the *nikkeijin* with requests to leave Japan and not to come back.

Emigration of elderly

Another extreme response would be the emigration of retirees out of the country to eliminate some of that country's fiscal burden. As problem-filled as this idea may be,

Jack Goldstone suggests this “reverse flow of older immigrants from developed to developing countries” as a win-win situation. He claims that developing countries would receive employment opportunities and valuable training for their younger cohorts and developed countries would have some “reduction to the strain on their entitlement system”(2010: 43). The obvious problem of the improbability that a large enough number of retirees would agree to leave their families, communities and homes to live out their days, makes this option quite unfeasible.

Euthanasia

The most extreme response of all is a difficult topic for public discussion. As a global society, we have become so dependent and attached to life-saving, life-sustaining medication and procedures that the idea of allowing people to die has become inhumane and even murderous in some parts of the world. This suspension of life perhaps beyond a persons ability to speak or decide for themselves their destiny sometimes results in legally locking them in a position of incompetence to make decisions due to affects of the same life-saving, life-sustaining medication and procedures previously accepted by that same competent (at that time) person.

Euthanasia is considered to be “in conflict with basic ethical principles of medical practice” by the world medical community (World Medical Association, 2002: 1).

Assisted suicides are legal in the Netherlands, Belgium, Luxembourg and the states of Washington and Oregon in the United States. Garrett and Jane Hardin, two population giants willingly used this method in 2003. Whether perspectives of Euthanasia and its legality will change in a rapidly aging world is yet to be seen. For this paper, it is an option far too under-developed to be seriously considered as a response.

Japan blundered once with inadequate conditions for the unfortunate *nikkeijin* therefore it is doubtful the government would attempt such measures again. The likelihood of Japan's ability to persuade first generation Japanese to return to their birthplace is unknown. Consequences of the 2011 earthquake and tsunami may act as a stimulant to the present diaspora community to return home to assist families. On the other hand, the faulty nuclear reactor troubles in Fukushima may cause the opposite affect of emigration. Overall the cost to lure 2.6 million people back to their homeland would be quite high and the probability for cooperation by these individuals are likely to be low. The reverse flow of immigrants in the form of the elderly retiring in some sunny coastal developing country is also unlikely given the strong culture of family and community ties. Finally, although euthanasia is still illegal, the Japanese Association of Acute Medicine has approved euthanasia for terminally ill patients under certain conditions (CNA, 2007). Every possible response has obviously not been covered, however the most prominent in the literature has been, as well as a few interesting, less-explored options that have just been mentioned.

The three main responses that this paper focuses on is immigration, pro-natalist policies and the changing nature of the workforce. There has been growing resistance to continued immigration in many of the Western European aging countries. In the next chapter Japan's stance on immigration will be explored. Additionally, despite many efforts by Western governments to boost the "birth dearth," no positively successful approach has evolved. Japan too, explores pro-natalist policies and will be expanded in the next chapter. Finally, the increase of female workers, the increase in retiree workers and the diffusion of robotics into the workforce are the three types of changes in the labor

force focused on in this paper. This next chapter explores Japan's responses and the challenges they pose.

CHAPTER 5

NATURE OF JAPAN'S RESPONSES

Recalling the proposed fifth stage of demographic change starting with declining TFR, leading to an aging of society, followed by a shrinking of the workforce and resulting in total population decline, it is apparent that each of these stages are interconnected, yet create different challenges. Although other countries have tried to combat declining birthrates and potentially shrinking workforces, Japan does not have an example of another developed country that has experience in creating and managing systems for a growing aging society as well as dealing with a declining population.

If Japan concentrates on increasing the work force through immigration then the already limited funds for its growing aging population will decrease in order to fund necessary social problems that come with increased immigrant population. If Japan continues to fund pro-natalist incentives to only a minimal rise in TFR, then Japan also puts its national budget in more risk for only minimal results that may be a generation or two away. Finally, if Japan focuses on taking care of its aging society, what will its future look like? Japan's approach therefore, to the options brought forth in this paper will need to consider all aspects of its demographic position. After a brief examination of Japan's economic responses, a narrower look at immigration, pro-natalist policies, and change in the workforce, is made.

Japan's Economic Direction

Tax Increase

The portion of payroll tax dedicated to fund pension and social security will inevitably grow as each nation ages. Japan comparatively has a little more room to grow

in taxes than Europe and the United States. Its tax ratio is relatively lower in both personal income tax and taxes on goods and services, and the government was able to successfully raise payroll tax and increase benefits, without much fuss from civil society.¹⁹ Even with these positive aspects some economists believe “it is unlikely to be possible to finance this additional expenditure without [additional] tax increases” (Keen, 2008: 63).

Cut Benefits

The reform legislation passed in 2004 will gradually cut benefits from 59.3 to 50.2 percent of an earner’s income. Here too, IMF economists believe this reform to be an improvement, yet further adjustments are suggested. The introduction of an automatic benefits adjustment mechanism, more oversight of private pension plans and more supplementation of higher private retirement savings are some of these suggested adjustments (Iakova, 2008: 84-91).

In addition to public reform, pensions have been reformed recently on the private level also. Japan’s corporate environment has been known to be secure for two reasons: lifetime job security and decent pensions. However, in 2002, the government started allowing companies to cut private pension benefits. In 2010, JAL cuts its pension benefits by 50 percent. Several other large companies have plans to follow suit, such as Mitsubishi Heavy, NTT and Kinki Nippon Tourist.²⁰ The companies must have two-thirds support from retirees before receiving clearance to cut benefits. Many retirees have

¹⁹ In 2004 Prime Minister Junichiro Koizumi “persuaded Japan’s Diet” to an increase in payroll tax from 13.6 to 18.3 as well as a cut in benefits by 20 percent (Shapiro 2008, 70).

²⁰ Kinki Nippon Tourist, which lost 8 million dollars in 2009, was able to persuade its 1,400 retirees to take a 10 percent cut in their pensions and the 2,100 current workers to accept a similar deal (Clenfield, 2010).

complained of being bullied into agreeing, while many still comply due to their “emotional connection with people still in the company” (Clenfield, 2010: 1).

Borrowing Funds

Borrowing funds from future generations only continues the burden of sky rocketing national debt. According to the CIA fact book nearly all countries already have a public debt a good percentage higher than each countries GDP. For example the world average public debt is 59.3 percent of global GDP, while Japan tops the list in this category as well, with its public debt at 225.8 percent of its GDP, making this option unsustainable.

Immigration

Japan traditionally has been viewed as being very tight on immigration even during the pre-military era of the Tokugawa period (1603-1868). Although Japan has been famous for its ability to borrow and adapt ideas and institutions it seems to have drawn the line on people. With the exception of inclusion of the *Ainu* from Hokkaido and *Ryuku* people from Okinawa during the end of the Tokugawa period, Japan has been very closed off to foreigners in comparison to other industrialized states. The largest populations of foreigners living in Japan are the Chinese numbering 600,000 and the Koreans a little less than that, followed by the fairly recent admissions of *nikkeijin* from Latin America. Japan still struggles with its equal treatment of foreigners, as witnessed by its treatment to *nikkeijin* who came to Japan as a guest worker. Some of the unequal treatment to these foreigners included inequality in pay, sub-level living conditions, short lengths of stay, inability to receive permanent resident status, lack of educational opportunities and little integration of children of immigrants into Japanese society.

Japan has also been known as a somewhat controlled mono-ethnic society and its policy actions have been interpreted as xenophobic. Some scholars have conducted research through content analysis in attempts to show that Japan is moving from a mono-ethnic society to a multi-cultural one (Tai, 2009). This however, is not the consensus either in the literature or in the actions of the government regarding immigration policy (Bermingham, 2001; Hockstader, 2010). According to the *Japan Times*, not only does “government marginalize the existing foreign population by running absurd campaigns against foreign crime and refusing to enact the most basic of human rights²¹ legislation for foreigners, but laws are passed only to control foreigners and none to protect them” (Brophy and Arudou, 2004).

The long run of the Liberal Democratic Party (LDP) over the last five decades has been highlighted as being pro-business, while keeping the government budget typically low. The LDP was known to “coddle [d] many producer groups with cartel-like legislation and other policy favors” (Rosenbluth, 2007:12). With sustained relationships between the political system and businesses, it appears that if businesses were in need of labor, skilled or unskilled, the government entities would oblige.

For example, when Japan experienced economic growth in the 1980’s the temporary guest workers program was devised under the auspices of a “training” program, with pro-business conditions that bordered on violating human rights and put a wedge in wages between the pay received by immigrant “trainees” and Japanese workers.

²¹ Some immigrants arriving on “training visas” (190,000) are subjected to 16-hour days, below minimum wage, battle factory fumes and little training or legal protection. 127 of the trainees have died since program started. The UN has urged Japan to scrap the “training Program” (Tabuchi, 2010).

The guest workers, with Japanese ancestry (*nikkeijin*) typically from Latin American countries, were paid a “training” wage, which gave businesses an economic advantage, when these same workers were actually doing work. Another advantage for businesses was the limit of two years length of stay, allowing firms, as well as local and national governments to not carry the cost of assimilating these immigrants into society. Thus, long-term health and retirement benefits were not offered, housing was often sub-standard and families often did not accompany the workers, therefore social programs to assimilate children into schools were avoided.

Germany had a similar experience when its economy started to grow in the 1960’s. There was an influx of immigrant workers from Turkey. They never “imagined that they would actually settle down in Germany with its high cost of living” (Shimada, 1994:10). In Japan’s case, by limiting the *nikkeijin*-trainee workers to two years, the government could essentially maintain control of the flow of immigrants. As it happened, additional illegal immigrants increased as the demand for jobs increased. In the end, when the workers that had entered legally were no longer needed they were paid to leave and asked not to come back, thus avoiding Germany’s dilemma.

The pressure to dissolve this temporary training problem likely came from several factors, such as a rise in unemployment and a slow-down in economic growth. Another condition occurred in the late 1980’s when attention was made to the increase in illegal immigrants that followed the demand for workers. Pressure for an amendment of the Immigration Law “came from public concern over the foreign worker problem, which escalated to serious proportions during the late 1980’s” (Shimada, 1994:61). Civil Society, in this case, pressured politicians based on fear of increased crime, potentially

due to low wages and poor living conditions, as well as the increase of un-assimilated illegal workers and their families. This change in policy could have come from the public against the wishes of these firms. However, more likely this transition was simultaneous to the change in these manufacturing firms that hired these workers, moving their operations out of Japan.

This “hollowing out” period leads to an examination of the reaction of unions, another potential force of resistance to immigrant workers. It seems likely that unions could oppose an increase of immigrant workers in order to protect their jobs. The nursing union is one example of this opposing force as evidenced by requesting difficult testing for foreign nurses. However, according to Leonard J.Schoppa, on a macro-level “Japanese labor unions have yet to take a lead in accusing firms of exporting jobs through overseas investment” (2006:109). He points to the lack of any mention of the “hollowing out” issue in the annual two-hundred-page policy statement issued by Japan’s largest union federation, *Rengo*, in 2003. He attributes this lack of resistance to the commitment of firms to adhere to its promise of lifetime employment as one of the possibilities.

Although there is no doubt that changes are occurring and range from benefit cutting as seen by companies like JAL and Kinetsu, to compromises such as allowing workers who reach retirement age to be rehired at a lower wage with partial benefits. The conglomerate, Nippon Steel Corporation (NSC), which took actions as the steel industry shifted its product, its volume and increased efficiency resulting in what could have been massive lay-offs, is one creative example of this. Instead NSC moved from 79,000 employees in its peak in 1970, when it merged Fuji and Yawata, to 17,000 workers in 2002 without “summary dismissals and mass discharge” (Abegglen, 2006:43). This was

accomplished largely through natural attrition as workers retired each year their numbers were not replaced. In addition, many firms started diversifying and assigned their workers to subsidiary and affiliated organization-*shukko*.

Thus, firms may not need immigrant unskilled workers at least in the manufacturing sector due to hollowing out. Civil Society may resist increased immigrant due to fear of the problems perceived or real experience from the temporary workers in the 1980's and its ensuing increase of illegal immigrants. Politicians may anticipate this reaction by their constituents and choose not to take action to increase immigrant workers. And although unions as a whole have not resisted, the opposition shown by the nursing sector is real.

For over a decade, there have been many suggestions to loosen immigration policy in Japan in order to deal with the shrinking workforce and eventual population decline (Sawa, 2010). Many of these suggestions have come from outside institutions such as the United Nations. However, much of the domestic rhetoric from Japanese politicians has been the opposite. A Regional Immigration Bureau official, Minoru Tanaka was quoted as saying, that "if unskilled foreign laborers are allowed into Japan, it will lead to total chaos (Terry, 2002: 1)." Taro Aso, the 2005 Foreign Minister, has been known to speak of the country as "one nation, one civilization, one language, one culture and one race (Japan Times, 2005:1)." Even the Democratic Party of Japan, which came to power in the summer of 2009, has had plenty to say about population decline, but immigration is barely spoke of (Hockstader, 2010).

In addition, the most recent public opinions polls show that well over the majority of the population feel immigrant workers should only be admitted "as long as jobs [are]

available” or with “strict limits” (World Value Survey, 2005). When the survey question results are separated into age cohorts, there is a slight increase among the older population that believe in strict limits, however overall more than 90 percent of the age cohorts agreed with one of those two responses (see Table 5.1).

After more than a decade of debating the need to loosen immigration policy, two fundamental laws have been implemented. In 2009, the Immigration Bureau of the Ministry of Justice implemented two acts, with the abbreviated names of the “Immigration Control Act” and the “Alien Registration Act.” The “Immigration Control Act” introduces a new system of residence management through an issuance of new residence cards administrated and controlled by the Immigration Bureau, as opposed to being controlled by local governments. The “Alien Registration Act” forces all aliens to register under this new system. Although there has been much discourse in the past decade or two regarding the impending shortage of workers and the necessity to open Japan’s border to foreign workers, the purpose in these two acts are clear that Japan has not the intention of loosening borders, but quite the opposite. Both of these acts simply address process issues of entry, deportation and procedures. There is no mechanism to increase the number of legal immigrants into Japan. If anything, these can be used to tighten measures and numbers.

There have been some minimal efforts to open selective areas up to immigrants, such as Indonesian and Filipino²² caretakers, and possibly some more nursing personnel. Japan is also considering removing the limit on the length of stays of foreign dentists,

²² Countries with Economic Partnership Agreements (EPA’s)

which is currently 6-7 years. However, these measures have many restrictions, which create

Table 5.1 Japan’s Public Opinion on Immigration Policy

Immigrant Policy	Total	15-29 years	30-49 years	50 and over
Let anyone come	2.90%	4.70%	3.20%	2.00%
As long as jobs available	42.40%	52.40%	49.10%	34.30%
Strict limits	50.10%	39.40%	43.90%	58.20%
Prohibit people from coming	4.60%	3.50%	3.80%	5.50%
Source: World Values Survey 2005				

very limited admission. For example, Indonesian and Filipino caretakers must pass a tough licensing exam given only in Japanese. With a limit of 1000 caretakers admitted annually, the first group of tested caretakers produced only a couple dozen who passed the exam (Tabuchi, 2011). Although the present Prime Minister, Naoto Kan announced in February 2011 a plan for a more open Japan, there was no mention of loosening immigration policies.

Pro-Natalist Policies

In the mid 1990’s Japan experienced what the government coined the “1.57 Shock.” This was when the government began to see low TFR as a social problem. Japan echoes other countries in its attempt to raise fertility rates with lump-sums for new births equaling around \$6,000, free tuition for high school and greater spending on sorely needed childcare facilities (Wakabayashi and Inada, 2009). In addition, during the brief Hatoyama administration, the new Prime Minister was able to pass new legislation allowing for couples with small children, to receive a monthly allowance totaling over

\$3,000.00 annually, until the child reaches 15 years of age, state-supported day care, and tuition wavers (Japan Times, 2010; Wakabayashi and Inada, 2009).

Other countries such as France, Germany, Denmark and the Netherlands have previously offered such economic inducements. According to Wakabayashi and Inada, the “results have been mixed, dividing researchers who study government enticements” (2009:1). As other industrialized states are finding out, it is not as easy to change a family’s choice to have more children merely by a payment of cash. Money can go only so far. Patricia Boling, a women’s study specialist claims that, “in economies where women are forced to choose between, having kids or having a good job, they are increasingly deciding on jobs not kids” (Wakabayashi and Inada, 2009:1). Even if any of these attempted incentives were successful it would take a full generation to realize an increase in birth rates (Bermingham, 2001).

Whether the various governmental pro-natalist measures are effective is still unclear and it may be too soon to answer. Studies by Guy Laroque and Bernard Salanie, which studied the results of France’s pro-natalist policies, show that financial incentives are higher for first-born children, and in fact are zero for births of rank three or more. Their studies have also agonized over isolating causal factors for changes in fertility rates (2003, 2005). One study suggests that, even when cash allowances are boosted by 25 percent, the fertility rate may climb as little as 0.6 percent. Moreover, the temporal lag in this approach is at best a long-term approach to a short-term dilemma. According to the CIA Global Trends Report, “large and sustained increases in the fertility rate, even if they began now, would not reverse the aging trend for decades in Europe and Japan” (2008: 21). One thing is clear and that is the attempt to reverse this decline so far shows no signs

of success.²³

There is an initiative headed by Japan in coordination with the United Nations and a few other countries, which could possibly reverse this trend. This “Satoyama” Initiative promotes resource management and land use with a strong interaction between human lifestyles and the natural world. The intent of the project is to create pilot projects of sustainable communities that could serve as an example of better natural resource management and increase rural living. Some regions such as Hokkaido have recorded higher drops in rural population. Measures as extreme as giving land away to young couples to settle and build homes, have been tried in order to reverse urbanization (Onishi, 2008). It is possible that if reverse urbanization actually occurs, there could be an increase in birthrates as agrarian families have a need for more children to help work the land.

Population aging and decline, although related, require different responses. Japan’s ability to deal with decline in total population is not as promising as its ability to deal with an aging population. Japan’s resistance to loosen immigration policy as well as the historical lack of success of pro-natalists policy in other countries, are proof of this. The responses to the challenges of graying, however, are quite visible in Japan’s national rhetoric and actions. The changing nature of the labor force is evidence of these responses, where an increase in elderly workers, female workers and robotic technology are set to change the economic, political and social conditions of this era.

²³ There is “no consensus among policymakers or demographers about what policies best encourage fertility” (Goldstone, 2010: 420).

The Changing Nature of Labor

Addressing graying by using these untapped resources may likely be politically unpopular, however compared to a massive influx of immigrants and the risk of diluting Japan's culture, it may be a more preferred option. A good portion of the retired could feasibly remain productive workers, adding numbers to the workforce and easing pressures on retirement systems by deferring pension obligations. The World Health Organization has developed a Disability Adjusted Life Expectancy (DALE) indicator, based on the expected number of years lived in full health. Japan has the highest ranking of 74.5 years, followed by Australia with 73.5 and close to a dozen European countries around 72 years of age (AORN, 2000). Encouraging the participation of women who have been absent from the labor force is another viable option. These two measures would require social adjustments to facilitate the transformation of the workforce. Continuing education obviously would be required to keep older workers and previously non-working women familiar with new technologies and flexible working hours would make continued working more attractive to older workers and women.

Women in the Workforce

Japan's work culture has been historically male-dominated and there are many aspects that would need to be attended to, to make returning to work an attractive option for women. Women are often placed in gender positions nicknamed "OL" (Office Lady), doing menial jobs like "Ochakumi," the mandatory serving of tea to guests and colleagues, done only by women (Fukuma 1996). Although Japan has moved from the 101st ranking on the gender gap report to the 94th position, the average pay still is a little less than 65 cents to every dollar a man earns, for the same work. If the government or

the private sector hopes for cooperation from women, they still have a long way to go toward gender equality (Hausmann, Tyson and Zahidi, 2010).

There are signs, however that Japan is trying to move from a male-oriented corporate culture to more gender equality. There have been a number of pieces of legislation passed since the mid-1990's, encouraging equality in the workforce (see Table 5.2). These measures include general provisions against discrimination, addressing increased symmetry

Table 5.2 Gender-Equality Legislation

Year	Policy Name or Event	Approached
1985	Equal Employment Opportunity Law (EEOL)	Prohibits against discrimination in lay-offs and resignation
1990	"1.57 shock"	Heightened awareness of decreasing birthrate
1992	Childcare Leave Law	
1994	Angel Plan	Expand childcare to children under 3 Increase childcare facilities
1996	Plan for Gender Equality 2000	Created: Headquarters for the Promotion of Gender Equality Gender Equality Bureau Council for Gender Equality
1999	Basic Plan for Gender Equality Society	Revision of EEOL
1999	Basic Plan for the Promotion of Measures for the Declining Birth Rate	Addresses balancing child rearing and part time work
1999	New Angel Plan	Improve childcare Employment opportunities Mother-child insurance, consultation and education
2002	Plus One	Looked at work-style for men Provides community support for child-rearing
2003	Law for Measures to Support the Development of the Next Generation	Provides support for the Next Generation
2004	New-New Angel Plan	Supports the autonomy of young people

Source: Mori and Scarse, 2010

among genders both at work and at home and specific measures such as increase childcare, mother-child insurance and consultation services. There has also been a marked increase of women business owners in Japan. According to a survey of women company presidents by Teikoku Databank, businesses run by women are now numbering 65,452 (Tamura, 2010).²⁴

Japan, unlike other advanced economies, has an unusual trend for female employment known as the “M” curve (see Figure 5.1). The typical increase in female labor participation happens in late teens through mid-twenties, as in other countries, forming the first hump of the “M”, followed by a steady decline where Japanese women have tended to quit work upon marriage or the birth of their first child. Many women never return to work and the rest show a gradual incline and typically still only part-time or temporary work. Therefore, Japan has a large resource of non-working educated women to pull from which could aid in increasing the workforce. Japan has the lowest percentage of working mothers at 30 percent, compared the US at 54 percent and the Netherlands at 73 percent (Wakabayashi and Inada, 2009). This translates to a surplus in Japan of 70 percent of mothers who could potentially add to the work force.

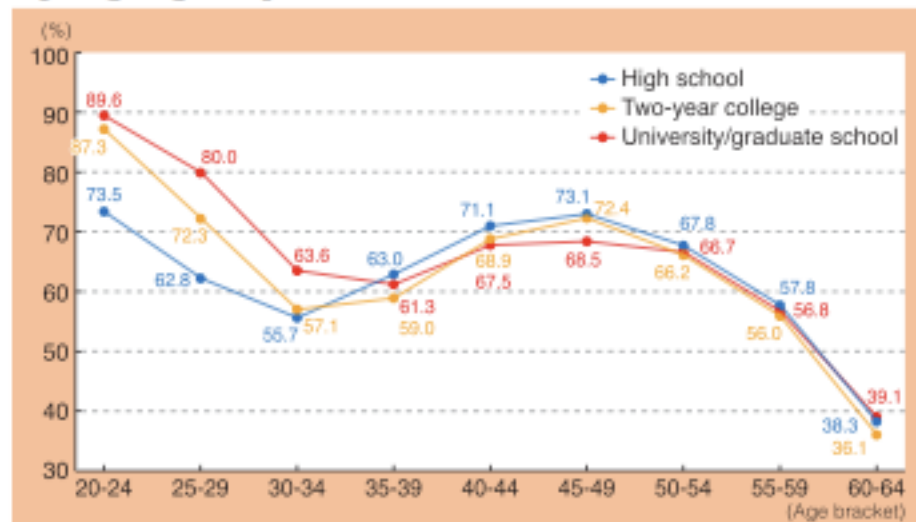
Whether the effort is to encourage families to have more children or encourage women back into the work force, there are other factors that need to be considered. Some of those factors are more supportive corporate culture, adequate childcare facilities and greater roles for fathers at home. These factors continue to be examined by government

²⁴ This figure does not include sole proprietors.

ministries, such as the Ministry of Health, Welfare and Labor as well as research think tanks and non-profit organizations (NPO).

An array of policies, plans and promises were almost annually discussed, approved and proclaimed since the “1.57’ shock in the mid-1990’s (see Table 5.2). Many included an expansion of an already bureaucratic-heavy government from establishing headquarters,

Rate of working women by age group/education level



Source: “Labor Force Survey” (2002), Statistics Bureau, Ministry of Internal Affairs & Communications

Figure 5.1 Japan’s “M” Curve

councils and bureaus for Gender Equality,²⁵ to commissioning committees to address how to counter falling birthrates, reduce anxiety and strengthen young people's autonomy.²⁶

There have also been attempts encouraging women back to universities and colleges for "Recurrent Education-Reemployment" programs. Typically these programs involve crash courses in current events, business English, recent technology and a choice of accounting or marketing refresher courses. The program is subsidized by the government and lasts a year. The pilot program drew the interest of 200 schools throughout Japan in the first year. By the third and final year only three institutions remained. Without providing mother's with adequate infrastructure such as childcare and flexible hours, these women remained limited in their ability to work or attend school, and thus the program attracted very few participants.

The main obstacles holding mothers back from returning to the work force is the lack of sufficient childcare facilities, especially geared toward children under three years of age. There are long waiting lists for day care facilities with more demand in the urban regions (Wakabayashi and Inada, 2009). Although many companies have plans to build internal childcare facility or subsidize baby-sitting services, "20,000 additional child day-care centers are required between 2011 and 2020 in order to maintain the current labor workforce" (Price, 2010: 21).

A second obstacle for women is the absence of help with housework and child rearing. Research shows that Japanese men contribute less time toward these activities

²⁵ Plan for Gender Equality 2000

²⁶ In 2006 a special committee released a reform policy relating to the concern that the main reason young people were remaining single was a lack of hope regarding career options (Schad-Seifert 2006).

than in any other nation. The average amount of help from husbands per week is only 20 minutes (Price, 2010). Policies such as the New Angel Plan and Plus One, have included encouraging equality in child rearing. One NPO called Fathering Japan accents this equality by training men in various areas of child rearing.

Raising the Retirement Age

In 1994 legislation was passed in Japan to gradually increase the pension age from 60 to 65 starting in 2001 and ending in 2013 and 2018 for men and women respectively. The timeframe for this policy from start to finish took 26 years. The U.S. passed a similar amendment to the Social Security Act in 1983 to increase benefit age by only two years over a 27-year period. The Association for the Advancement of Retired Persons (AARP) has calculated the suggested retirement age requirement to maintain 1995 age dependency ratios for Japan and other Western countries. All countries studied would require a retirement age of 72 and above, with Germany, Italy and Japan's age topping the list at 77 years of age. AARP goes on to suggest that Japan would only have a couple of decades to increase its pension age an additional 12 years, as well as its mandatory retirement age (Rix, 2000).

More recently, legislation has been passed to encourage companies to offer programs that provide continued employment, but at lower wage rates and with limited benefits (Abegglen, 2006). "Soft" measures have also been encouraged in the way of incentives to employers to encourage increasing the retirement age from the minimum statutory retirement age of 60 to 65 or even 70. Considering Japan's high life expectancy rate, as previously indicated by the WHO ratings, as well as general healthy habits of the elderly population due to good diet and consistent exercise and a strong work ethic, this

seems to be a potential source for workers. Statistics show that the longer people work, the longer they remain mentally and physically fit (Morrow-Howell, 2000). According to the Research Institute for High-Life, more “seniors” who once retired at age 65 are still very active in the workforce. Labor force participation at ages 60-64 and 65 and over are 70.9 percent and 29.2 percent respectively compared to the US at 58.6 percent and 20.3 percent and France at 19.5 percent and 1.6 percent (Matsuura, 2009: 1). With new innovations, including robotics, Japan could remain productive and dynamic.

Robotic Labor

The use of robots to replace people in the workforce is a potential aid to aging populations. As well as filling in the labor gap, robots can also improve the efficiency and productivity in the workplace. While robots will not increase the contributions into pension and healthcare systems they will not subtract from those systems. The diffusion of robotics into industries would come at an initial high cost, but once the costs reach parity, there could be increased benefits.

Japan has been leading research and development for several decades in the area of assistive robotic technologies. These technologies are geared toward rehabilitation and social interactions. The Netherlands, Germany, Italy, New Zealand and the United States are also participating in this type of research (Mori and Scarce, 2010).

Robotic technology is an extremely optimistic response to the challenges of a shrinking work force. This could assist in many areas especially in aiding a growing aging population. The general psychology of Japan in regards to its distinction between the animate and inanimate shows a willing match for this industry to prosper. Trends e magazine reported:

The Shinto religion does not draw the same distinctions between the animate and inanimate that people in the West do. The Japanese have no trouble imagining a robot that can think and feel. Moreover, 370,000 robots, about 40% of the robots in the world were already at work in Japanese factories by 2005. Japan's trade ministry issued a national technology roadmap calling for a million industrial robots to be at work throughout the country by 2025. Each robot would replace 10 employees, so that number would replace 15% of the workforce (Anonymous, 2008).

Increased robotics can replace workers, but also can increase efficiency in the work place and in individual lives, which would additionally aid the work force shortage. Robotics can range from sociable technologies, to hybrid-assisted limbs (HAL), to humanoids aimed at relieving humans of repetitive manual labor.

Sociable technologies first appeared as toys, however, future prospects could be potential nannies, teachers, therapists, life coaches and caretakers for the elderly (Brockman, 2010). Some studies have been done to see if these therapy robots acting as mechanical companions assist the patients in feeling better. They have shown to increase hormone levels, which leads to less stress (Sugimoto, 2010).

Hybrid Assisted Limbs (HAL) and the “power assist” robot suits work like exoskeletons and amplify the muscle power of its wearer’s legs and arms. Since over half of the agricultural population is 65 and older, these technologies could assist the elderly in working longer and help aid the nation’s agricultural sector by increasing efficiency and farmers profits (Yomiuri, 2010). The robots that can most affect the emerging industry of healthcare are robots that take some of the strain off nurses, such as “The Robot for Interactive Body Assistance,” which can lift and move patients (Dean 2009). Robotic nurses can assist in evaluating the physical condition of its patients based on posture and movements recorded by a camera. If signs appear that urgent help is needed

such machines are able to call an ambulance. There are robots that can lend a stable hand to be fed by, ones that can turn pages of a book, do simple cleaning and operation of other machines and even robots that can talk, laugh, cry and sing.

Japanese companies have about 70 percent of the global robot market. The Economy, Trade and Industry Ministry plan to support the robot industry and have been dedicating large financial support to the research and development of robotics (Mori and Scearce, 2010). The robot market is expected to increase from about one trillion yen to nearly ten trillion yen by 2035 (Yomiuri, 2010).

The nature of Japan's direction in dealing with these issues appears to focus on coping with domestic balance of both workforce and the pension systems more than dealing with population decline. Despite previous examples by Western countries of expanding labor forces through increased immigration, Japan for various reasons presented earlier does not appear to take this direction except for a very limited form. In regards to pro-natalist policy western countries have yet to supply a successful example for Japan to follow. Although Japan has tried piecemeal measures of increasing childcare, child allowances and attempts to improve working conditions for mothers, with the underlying hope of an increase in fertility rates, these measures do not indicate a potential increase in births. Therefore, intentional or not, Japan is indicating that the acceptance of population decline is its destiny and have focused their energy on the balance of its domestic situation.

The changing nature of the work force in Japan will involve an increase of previously non-working women (primarily mothers), elderly near or beyond retirement age, and robotics as a replacement to humans or in an assistive role. These changes can

create consequent social challenges such as the need to redefine gender roles and a re-evaluation of family structure and multi-generational living. How Japan's government, firms, families and individuals deal and adjust to the "triple favor" imposed on women, the potential forced increase back to multi-generational families, and the replacement of family members or health assistants by robots is yet to be seen.

CHAPTER 6

CONCLUSION

As this paper has brought forth, Japan has many challenges to deal with stemming from the demographic drivers of population aging and decline. As stated earlier, there is no silver bullet. A combination of responses approaching these challenges is a more likely response. After making some simple observations regarding the fifth stage of the demographic transition, I will re-visit the three research questions and attempt to answer them.

Observations for a Fifth Stage

After examining the growing group of countries experiencing the demographic shifts of population aging and decline we have begun to understand the dynamic relationship between birthrates, life expectancy rates and societies. Komine and Kabe's order in demographic shifts that started with a decline in total fertility rate (TFR), then a growth in the elderly population, followed by a shrinking work force and then ultimately resulting in total population decline, was used to examine these countries affected. First, consistent with Komine and Kabe's work, all countries that are experiencing either graying or population decline have below replacement level fertility rates. Second, anomalies are present where some populations decline before a considerable growth in the elderly population occurs as in Russia's case. Alternatively, in the case of the United States, the elderly population is expected to grow without a population decline. Third, regardless of the rate of aging or decline, all of the countries examined in this thesis are expected to have less than 3 workers supporting one elderly and the majority will likely only have two or less workers per retiree within the next couple of decades.

Thus, the thesis indicates that many countries are in a fifth stage of the demographic transition. The four conditions Japan has followed are not consistent among all affected countries. Two important findings are apparent. First, each country has a unique experience of this fifth stage. Although all of the affected countries start with a below replacement level TFR, some then have growing aging populations, some have population decline, and some experience both. All the affected countries are expected to have declining workforces in the coming decades. The second finding this study makes clear is that there is no “end state” similar to the equilibrium projected in earlier demographic transition models.

The relevance of this analysis is that many countries examined in this paper can use this sequence as a harbinger of conditions to come. If these countries engage in anticipatory thinking, planning for the future will be vital. If states like Russia or Eastern European states continue to spend time, resources and policy on attempting to increase the population only to have an even more precarious problem of graying shortly following, then it would be more advantageous for these countries to immediately start changing the labor system and social programs.

Japan’s Focus

This paper has presented the varied and integrated responses being attempted or considered as a means to deal with the challenges of population aging and decline. It has appeared that while Japan is ahead of other countries in the growing variables impacting population aging and decline, the various actors as a whole are moving toward policy and response to dealing with primarily the aging population. Immigration and pro-natalist measures are two areas that attempt to increase population, thus dealing with population

decline. Increased immigration has not been favorable. As this study shows the only legislation passed within the last decade regarding immigration was the “Immigration Control Act” and the “Alien Registration Act.” Both of these acts aimed at tightening immigration policy, not loosening. Pro-natalist measures have been tried and while it is too early to tell, there have been no precedent in other countries that indicate a sufficient increase.

While population aging and decline are related issues, they create different dilemmas, such as a shrinking work force, total population decline and lack of necessary economic and societal infrastructure to support a larger elderly population and therefore each requires different solutions. The first research question asks which dilemma(s) are the Japanese government, bureaucracies and business’ focusing on and to what degree? It appears since Japan is not making progress in increasing its population through either immigration or pro-natalist policies that the focus is not on total population decline. Alternatively, the focus on a shrinking workforce does appear to be where Japan is focusing its energy. This is demonstrated by the numerous pieces of legislation passed in the last decade or two in the attempt to increase women in the workforce (see Table 5.2). Also, both businesses and governments have made moves to increase the retirement age and pension age enabling more elderly workers.

Changing Nature of the Labor Force

This paper looked closer at the changing nature of the work force in Japan. In answer to the question regarding the ways in which the labor force is changing, this study finds three important changes. These changes include increased use of robotics, and an increase of women and elderly workers.

The increase in robotics in the workforce will have a definite impact on the shrinking workforce dilemma. The estimate is that one robot could replace 10 employees and essentially replace 15 percent of the workforce. This could be in a direct replacement of humans in the form of humanoids or therapeutic robotics performing nursing duties or aiding the elderly in activities such as eating and lifting. Robotics can also be used in attempts to increase efficiency of workers who remain in the workforce beyond present retirement age with the aid HAL attachments. This type of response will most likely be motivated by the market, however, government assistance in the form of research and development support and subsidies will have an affect on its scope and effectiveness.

Japan's surplus of educated women, who for cultural and economic reasons often have withdrawn from the workforce, are now being encouraged to support the shrinking workforce in hopes of boosting economic growth, raising contributions to the social security system as well as increasing innovation. The success of this direction is highly connected to access to adequate childcare, which is sorely missing in Japan, a change in corporate and family gender roles and increased participation in childrearing by husbands. Many policies have been proclaimed and tried, some successful such as the increased entrepreneurship among women, some not as successful such as the "Recurrent Education-Reemployment" program. One point that has not been made yet is the potential unintended increase of working women due to increasing financial strains caused by the global economic crisis as well as recent natural disaster. Whatever the motivating factor there will likely be more women in the Japanese workforce in the next coming decades.

Increasing elderly in the workforce may not be as abundant as women. This is not

due to inability or willingness. It is due to the fact that already a large percent of elderly still work beyond retirement age. With the labor force participation at ages 60-64 and 65 and over at 70.9 percent and 29.2 percent respectively compared to the US at 58.6 percent and 20.3 percent and France at 19.5 percent and 1.6 percent, there is less surplus of workers to pull from. However, as the elderly population grows that amount will increase. Additionally, with new robotic innovations that boost elderly performance, Japan could remain productive and dynamic.

Social Changes

How these labor changes could potentially affect family structure, gender roles and generational obligations is the last question to be answered. As mentioned earlier Japanese wives receive the least amount of childrearing participation from their husbands than in other countries. Therefore, with more and more mothers returning to work, more women will be in need of childrearing help. Whether this will come from a collective change among husbands wanting to participate or a push from businesses encouraging fathers to take childcare leave is not known. If no change takes place, a possible increase in divorces could occur. Gender roles would also need to change on the corporate level to change the “ochakumi”-style work life for women into one more based on gender equality.

Another area of social change could be demonstrated with nuclear families reverting back to multi-generational living conditions. This can aid the public funds by extra help in taking care of the elderly that might normally fall under state care. This will also deplete younger generations autonomy in regards to choices of living conditions, time and resources. With smaller families there are less siblings to share the

responsibility of caretaking of aging parents and grandparents. One last generational problem would be in the gradual disappearance of inheritance. Most people will use all their savings to support their long lives with less or none to leave as inheritance.

Other Countries

This analysis can be beneficial for other countries that have limited choices to respond to population aging. Most countries if motivated can certainly increase the pension and retirement age. Japan can serve as a forerunner by providing both successes and failures in policy-making. However, admittedly, Japan's corporate structure has mechanism such as lifetime employment and seniority based pay not found in other countries. In addition, the cultural aspect of multi-generational co-habituating, which eases the burden of social costs regarding the aging cohorts, is practiced more often in Asian countries. Western countries may however use anticipatory thinking and create incentives for this burden sharing for families that become caregivers.

South Korea in particular as well as other Asian countries, however, can leapfrog these labor dilemmas and start implementing successful reform, and avoid wasting time on unsuccessful measures. The use of this surplus of female workers may not be applicable to some of the other countries experiencing a shrinking workforce as many of these countries already have a majority of their female population working. South Korea is an exception. There is a similar "M" curve trend in South Korea, therefore Japan's path could be useful for in regards to the future female workforce. The struggles that Japan has encountered involves changing the corporate culture that allows for more gender equality in the workforce, while still allowing for flexibility as not to discourage fertility and increase in infrastructure, specifically childcare. These struggles and responses may be

useful for countries like South Korea with similar conditions, however, further full comparative studies would be needed.

Other Findings

On a broader spectrum, this analysis makes clear that these demographic shifts have created interdisciplinary problems. This calls for a need for greater coordination between the government, economic and social forces and individuals. A new paradigm is needed encompassing serious and far-reaching changes in working arrangements, lifestyles, including the role of extended family, business practices and government policies.

Japan's situation makes clear that by either lack of intention (closed immigration policies) or failure of policies (pro-natalist), it will likely be forced to accept population decline. This acceptance may lead to a new type of society. In Ted Fishman's book *Shock of Gray*, he states that, "an aging population inevitably produces a more globalized economy, a more feminized and culturally diverse society and a less generous state" (Saunders, 2010: 1). While some positive internal conditions may develop along with challenges, global relations among graying states are sure to struggle with less capital to spend abroad for foreign military or diplomatic purposes. How Japan maneuvers in this new aging society can serve as a guide for countries to follow.

Future Scenarios

Japan is on the forefront of revolutionary demographic change. How Japan responds to its aging and declining population dilemma is important for the rest of the global "north" as well as the majority of developing countries. Responses by governments,

industry and individuals can move a new paradigm forward or assist in creating an unsustainable society. Here are two possible scenarios.

A pessimistic possibility would be a deepening of the generational divide. A struggle for power, resources and capital between generations could lead to intergenerational warfare and eventually a decline of the state. A breakdown of the family unit could lead to a break of cohesion, culture and societal bonds leading to a rise in poverty, and an increase in theft and violence.

An optimistic possibility would be a direction toward a new sustainability paradigm stressing non-material pleasures and cooperation. An expansion of education for all would lead to lifetime learning. More efficiency and innovation in labor and industry could sustain the economy. And a return to multi-generational cohabitating, a strengthening of community support and participation and a shift to a gentler and wiser society could be the beginnings of a new social paradigm.

Wild Cards

Futurists often include “wild cards” when forecasting potential futures (Cornish, 2004; Shapiro, 2008). These “wild cards” would include events such as war, global economic crisis, energy crisis and natural disasters. These events could completely alter a nation's direction in unexpected ways. It could be said that Japan is partially or fully experiencing the first three of these. However, during the final writing of the paper the later, natural disaster, has come to the forefront.

How Japan and its citizens will react to the Tohoku earthquake and Pacific *tsunami*, as well as the ensuing nuclear reactor breakdowns remains to be seen. A sudden need for workers may change Japan's position on admitting immigrant workers. Food

shortages may be a catalyst for younger urban dwellers to move to safe rural lands and develop “Satoyama”-like communities. If the agrarian sector were to grow, fertility rates could have an upward swing. Whether it will lead to state failure or some kind of miraculous re-building of Japan remains to be seen. For the present, the issues in this report will most certainly take a back seat to the more pressing issues caused by this disaster.

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