



The Guillotine:  
Japan's Demographic Transformation  
and its Security Implications  
By Tomoko Tsunoda and Brad Glosserman

Issues and Insights  
Vol. 9-No. 10

Honolulu, HI  
June 2009

## **Pacific Forum CSIS**

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## Acknowledgement

We would like to express our appreciation to Mr. Keisuke Nakashima for his assistance. He worked on “The Graying of the Great Powers,” the authoritative CSIS study on demographics and was generous in sharing the results of that work.



## Executive Summary

Japan is in the midst of a demographic transformation. The country's population has started to decline and is projected to shrink nearly 30 percent by 2055. The fertility rate has fallen well below replacement. The elderly share (age 65 and above) of the population is 21.5 percent, and will reach 38.9 percent by 2050, making Japan the grayest nation in the world. These changes have profound implications for Japan's future. The number of working-age citizens is shrinking. This influences GDP growth, cuts tax revenues, squeezes government budgets, and reduces financial options. All will have a significant impact on foreign and defense policy. A demographic transformation will also influence values and preferences, affecting priorities and transforming national goals.

Japan will continue to be wealthy, but it will be living off that wealth, not generating new capital. Japan's real GDP could fall 20 percent over the next century compared to what it would be if population size remained the same. Household wealth will stop growing and enter an absolute decline over the next two decades. By 2024, household wealth will have returned to 1997 levels.

As the population shrinks, it will be harder to retain economic competitiveness. Markets will shrink and innovation will be hampered. The cost of doing business will rise and foreign investment will be diverted to more dynamic markets. As GDP shrinks, tax revenues and savings will diminish. Governments will face increasingly difficult choices about priorities and the provision of services.

An older society will be more conservative and risk averse. It will be difficult to justify or pay for new or expensive weapons systems, especially when they come at the expense of more immediate social needs. There will be reluctance to send an increasingly precious resource – the younger, most productive members of society – into harm's way.

A shrinking youth cohort will make it harder to staff the Self-Defense Forces. A military career is already unpopular in Japan; it will be harder still to compete with the private sector in the future. Funding the military is always difficult; it will be tougher in a grayer society that has rising demands upon a shrinking pool of tax revenues. Official Development Assistance, already falling, will be cut more. Contributions to international peacekeeping operations, already low, will be even harder to make.

Positively, an older society will be "greener" with a smaller ecological footprint. An older Japan will put to rest the bogeyman of remilitarization and allow Tokyo to move past World War II in relations with neighbors. Success in managing this transition will allow Japan to be a model for other countries experiencing this demographic shift.

There are several ways for Japan to reverse the demographic tide or its impact – immigration policy, changing roles for women, innovation (in the form of robotics or other technological "silver bullets," including the nuclear option) – but none have much prospect of success. A more moderate foreign policy, that of a "middle power," is the most likely alternative, although neutrality will have supporters too.

The demographic transition will have profound effects on the region. Japan is likely to lose status relative to its neighbors. But its transformation will make it harder to demonize the country and thus drain tensions in Northeast Asia. There will be a greater inclination toward regional cooperation, not only because obstacles will be reduced but also because a country with diminished resources will be more inclined to reach out to other nations for help in dealing with shared problems.

The U.S.-Japan alliance must be prepared. Japanese contributions to the alliance – whether in terms of personnel or funds – will diminish. Equally significant will be the fall in Japan’s indirect support for the U.S. through recycling foreign exchange reserves, which will be increasingly needed at home.

To deal with these changes we recommend that Japan:

- reach a national consensus on its role in the world, within Asia, and in its alliance with the U.S. Japanese ambitions will need to be scaled back.
- embark on an intensified effort to strengthen ties with the U.S. That means creating constituencies in both countries that see Japan as more than just another ally or the alliance as merely one more tool in the U.S. diplomatic arsenal.
- redouble efforts to conclude a U.S.-Japan free trade agreement. This will tighten links to the U.S. and balance Japan’s growing integration into Asia; negotiators should focus on medium- and long-term benefits rather than protecting political constituencies.
- press for deeper integration within Asia. Norms and institutions that bind all nations in rule-driven relationships will safeguard Japanese interests.
- build a new partnership with South Korea. To remake this relationship, we suggest that Tokyo renounce its claim to Takeshima/Tokdo. Eliminating this irritant would allow two medium-size powers to work together more effectively on issues of shared concern.
- turn the Rokkasho reprocessing facility into an international fuel processing facility. This would make Japan central to Asia’s future by providing the energy that would make possible regional development and prosperity.

The U.S. should:

- change the language of engagement to reflect Japan’s new circumstances. Forget *quid pro quos*: alliance discussions should focus on how contributions serve broader public interests. They should focus on nonmilitary contributions by Japan. The U.S. should expect less ambition from Tokyo and a desire to focus increasingly limited resources on areas of more immediate concern, like Asia.
- get its economic house in order. As other countries make this demographic shift, consumption patterns will change and the U.S. will lose access to the cheap capital that allowed it to live beyond its means for decades.
- push for regional security mechanisms to pick up the slack before Northeast Asian “spokes” weaken. New multilateral institutions should be formal and inclusive.



- encourage the Asian integration process. Creation of an Asian community will stabilize relations in the region, create shared interests, and help minimize regional tensions. Japan's deep integration into the region will give it a mechanism to exert more influence in Asian affairs, and by virtue of its alliance with the U.S., tether the U.S. to the region as well.

The world has likely seen the high-water mark of Japan's international presence and assertiveness. In the future, the country will be increasingly inward focused and the U.S. should adjust its expectations accordingly. That does not mean giving up on the alliance. Especially as Japan navigates a difficult political and social transition, a sense of security and confidence in the U.S. commitment to its defense are vital. An enduring U.S. commitment to Japan's defense even in the face of these trends will demonstrate the sort of leadership that will enhance U.S. standing. An enduring alliance between our two nations that rests on a shared sense of purpose, of values and identity, and eschews a crude assessment of costs and benefits sets an example for all nations.



# The Guillotine: Japan's Demographic Transformation and its Security Implications

By Tomoko Tsunoda and Brad Glosserman

Japan is in the midst of a demographic transformation. The country's population has started to decline and is projected to shrink by nearly 30 percent by 2055.<sup>1</sup> The fertility rate has plunged. As a result, the elderly share (age 65 and above) of the population in Japan grew to about 20 percent in 2005 and recorded its highest rate ever, 21.5 percent, in 2008.<sup>2</sup> These changes have profound implications for Japan's future. A declining fertility rate and an increasingly elderly population will reduce the number of working-age citizens. This influences GDP growth, cuts tax revenues, squeezes government budgets, and reduces financial options.

While demographic transitions have attracted considerable attention, the security implications of that evolution remain largely unexplored. This paper tries to fill that gap by examining the impact of Japan's demographic transformation on security policy.

Make no mistake: reduced economic growth, diminished savings, and straitened circumstances will have a significant impact on foreign and defense policy. Government options will be restricted as revenues shrink. In fact, many options will be eliminated, hence our title: demographic change is a guillotine, cutting off Japan's future choices. A demographic transformation could also produce changes of a different kind, influencing the values and preferences of the Japanese polity. It will affect policy priorities and transform national goals.<sup>3</sup> Our analysis tries to assess the looming demographic transition's impact on Japan's goals and the role it will seek to play in the world. We conclude that Japan's demographic trajectory has a profound impact on Japan's future and the U.S.-Japan alliance. An aging, "shrinking" Japan creates sharp choices for the United States. Washington and Tokyo need to look at these trends without blinkers and begin to anticipate their implications for their alliance. They are not pretty.

This paper begins with a look at demographic trends in Japan, and compares those results with other developed countries and some key Asian nations. We explore the implications of those trends, starting with economic impacts and then focus on the security and foreign policy dimensions. Finally, we offer suggestions about Japan's

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<sup>1</sup> White Paper on Birthrate-Declining Society 2009 (平成 21 年版少子化社会白書)-Chapter 1, Section 2, Cabinet Office Government of Japan, p.17, [http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1\\_1\\_02.pdf](http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1_1_02.pdf)

<sup>2</sup> White Paper on Aging Society 2008 (平成 20 年版高齢社会白書) –Chapter 1: Graying Population, Cabinet Office Government of Japan, p. 2 [http://www8.cao.go.jp/kourei/whitepaper/w-2008/gaiyo/pdf/1s1s\\_01.pdf](http://www8.cao.go.jp/kourei/whitepaper/w-2008/gaiyo/pdf/1s1s_01.pdf)

<sup>3</sup> Jackson, R. and Howe, N., *The Graying of the Great Powers: Demography and Geopolitics in the 21st Century*, The Center for Strategic and International Studies, May 2008, p. 1.

options and how the U.S., as Japan's security ally and partner, should view these developments.

## **The demographic transition in Japan and the rest of the world**

This section examines the key features of Japan's demographic evolution. We look at its overall population, its composition, the low fertility rate and explanations for those changes. Changes in other developed nations and Asian neighbors are also examined to provide some perspective on what is happening in Japan. There are, by necessity, a lot of numbers. We apologize. For those whose eyes glaze over at the flood of statistics (the authors among them), we provide graphics to make the trends and comparisons easier to understand.

Obviously, projections are just that: the extrapolation of trends. They can change. If the potential impacts are as significant as we believe, then we would expect them to. Policy makers would be derelict if they did not act to correct these trajectories. Yet, the contours of the looming crisis have been evident for some time, and substantive changes have not occurred. That alone suggests that plotting current trends may not be as futile as it seems.

*Decreasing population and low fertility rate.* From 1950 to 2005, Japan's population increased a little more than half (53 percent) from 83.625 million to 127.897 million. Eight million baby boomers were born between 1947 and 1949, reflecting a fertility rate of 4.54 to 4.32. The population rose steadily until 2005; it has declined since then. According to the White Paper on Birthrate-Declining Society 2008, Japan is projected to lose 30 percent of its population by 2055, falling to 89.93 million.<sup>4</sup> In 1950, Japan was the fifth largest country in the world, when ranked by population; by 2005, it was 10<sup>th</sup>.<sup>5</sup> It is projected to fall to 18<sup>th</sup> place by 2050.<sup>6</sup> The UN World Population Prospects offers a slightly rosier picture: by 2030 Japan's population will total 117.68 million, an 8 percent decline from its 2005 base. By 2050, it will reach 99.349 million, a contraction of 22 percent from 2005.<sup>7</sup>

One of the major reasons for the decreasing population is a low fertility rate. Mid-range estimates project Japan's fertility rate to remain around 1.25 until 2050.<sup>8</sup> After the postwar baby boom, Japan's birth rate declined by 44 percent in the '50s, falling from 3.65 to 2.04. In the 1960s, it fell to around 2 percent (except in 1966: according to popular mythology, women born in this year – that of the fire horse – cannot marry; birth rates plummeted but recovered the following year). In the '70s, the birth rate fell another 17 percent from 2.13 to 1.77, falling under the replacement level. It declined 10 percent

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<sup>4</sup> White Paper on Birthrate-Declining Society 2009 (平成 21 年版少子化社会白書), op cit, p.17, [http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1\\_1\\_02.pdf](http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1_1_02.pdf)

<sup>5</sup> "Statistics Topics No.23 World Population and Japanese Population," Ministry of Internal Affairs Department of Statistics, July 10, 2007, <http://www.stat.go.jp/data/kokusei/topics/topics23.htm>

<sup>6</sup> Jackson and Howe, op cit, p.192.

<sup>7</sup> With a constant fertility rate.

<sup>8</sup> Transition of Birth Rate, National Institute of Population and Social Security Research, 2007, <http://www.ipss.go.jp/syoushik2a/tohkei/suikai07/houkoku/katei/11-1.xls>

in the '80s and 13 percent in the '90s. Having reached 1.26 in 2005, the National Institute of Population and Social Security Research projects the birth rate will bottom out at 1.21 in 2013. It will gradually recover to 1.24 in 2030 and 1.26 in 2050.

Japan isn't the only country facing the prospect of a graying population and a declining birth rate. This phenomenon is observed in most developed countries, particularly in Western Europe. In Asia, South Korea's fertility rate is even lower than that of Japan.

The population of Western Europe<sup>9</sup> was 324 million in 2005; it is projected to increase 1 percent to 328 million in 2030, but by 2050 the total population will fall 11 percent to 311 million. One study<sup>10</sup> divides Western Europe into two groups: a high fertility zone, consisting of Belgium, Denmark, Finland, France, Iceland, Luxembourg, the Netherlands, Norway, and Sweden with a birth rate of 1.8, and a low fertility zone that includes Austria, Germany, Italy, Malta, Portugal, Spain, and Switzerland, and has a birth rate similar to that of Japan, around 1.3.

Let's look closer at Germany, Italy, and Spain. Germany's total population in 2005 was 82.65 million. If the fertility rate stays at the 2005 standard (1.35), its population is projected to be 78.015 million in 2030, a 6 percent decline from 2005. In 2050, it will reach 69.736 million, a 16 percent loss from 2005.<sup>11</sup> Italy had 58.646 million people in 2005. With a constant fertility rate of 1.29, its total population will fall to 56.152 million in 2030, a 4 percent loss, and 50.656 million in 2050, a 14 percent decline from 2005.<sup>12</sup> Spain's total population was 43.397 million in 2005. When the birth rate is held constant at 1.29, it is projected to rise slightly to 44.995 million in 2030, and then have a 8 percent loss at 41.841 million in 2050.<sup>13</sup>

Not all developed countries face a shrinking population. The United States is projected to grow from 300 million in 2005 to 371 million, a 24 percent increase, in 2030 and will expand to 419 million by 2050. Its relatively high fertility rate is the product of a constant influx of immigrants who have not yet assimilated and reduced the size of their families. Other English-speaking countries, such as Australia, Canada, Ireland, New Zealand, and the United Kingdom will also experience population growth during the next 40 years. The total population of these countries was 121 million in 2005. If their average birth rate stays around 1.7 until 2050, their total population will reach 139 million in 2030 (a 15 percent increase) and 145 million in 2050 (a 20 percent increase). Australia (1.8), the UK (1.7), and Canada (1.5) have relatively low fertility rates among English-speaking countries.

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<sup>9</sup> Western Europe here includes Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland. (from Jackson, R. and Howe, N., op cit., p. 205 )

<sup>10</sup> Jackson and Howe, op cit, p. 42.

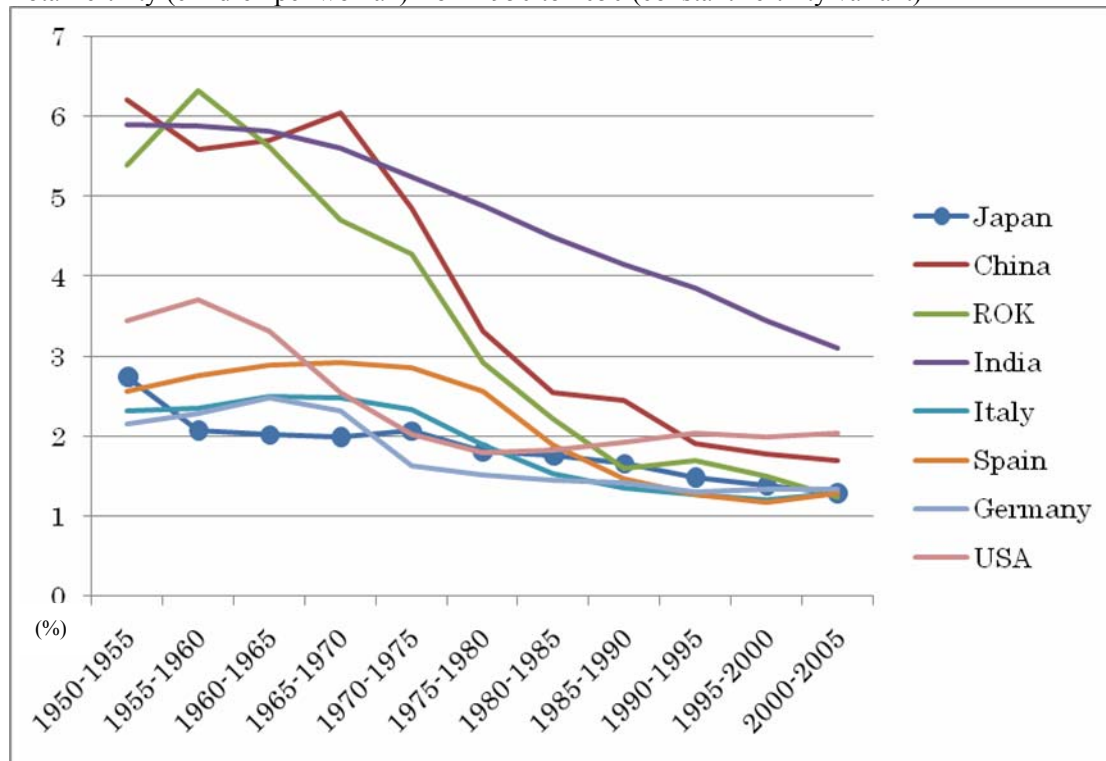
<sup>11</sup> World Population Prospects: the 2006 revision population database, The United Nations Population Division, <http://esa.un.org/unpp/p2k0data.asp>. The numbers are in constant variant as *The Graying of the Great Powers* used a constant variant for developed countries.

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

Elsewhere in Asia, the picture varies. South Korea's future looks a lot like Japan's. The ROK had a population of 47.870 million with a low fertility rate of 1.24 in 2005; it will reach 48.399 million in 2030 but then fall to 41.506 million in 2050, a 13 percent loss from 2005, if the birth rate is unchanged. Korea will follow Japan's trajectory – but its fall will be faster. China's population was 1.13 billion in 2005. With a constant fertility rate of around 1.70, it will reach 1.425 billion in 2030, but it will begin to decline to 1.336 billion in 2050. Blame China's "one child" policy for the decline. The policy was strictly applied to families in metropolitan areas (one child per family) but it was flexible for families in rural areas (maximum two children per family). In February 2008, some media reported that China was considering abandoning the one-child policy but in March 2008 China's family planning minister said that would not happen.<sup>14</sup> India's population will grow dramatically as a result of a high birth rate of around 3.1. Its population was 1.134 billion in 2005 and will continue rising to 1.710 billion in 2030. The total population of India will reach 2.317 billion in 2050.<sup>15</sup>

Total fertility (children per woman) from 1950 to 2050 (constant-fertility variant)



Source: UN World Population Prospects: The 2006 Revision Database

<http://esa.un.org/unpp/p2k0data.asp>

<sup>14</sup> "China to keep one-child policy," CNN.com, March 10, 2008

<http://www.cnn.com/2008/WORLD/asiapcf/03/10/china.onechild/index.html>

<sup>15</sup> World Population Prospects, op cit.

*Graying population.* Japan's population has been rapidly graying as well. In 1950, the number of "elderly" – age 65 and older – was 4.109 million, or 4.94 percent of the population. It has been growing substantially since then, reaching a 7 percent share of the population, or 7.331 million people in 1970. The annual growth rate of the elderly share jumped 3.47 percent and it has accelerated since then.<sup>16</sup> In 2000, Japan was the "grayest" country in the world, with its elderly cohort consisting of 17.4 percent of its citizens.<sup>17</sup> In 2005, Japan's elderly represented almost one-fifth (19.75 percent) of the total population and the UN Population Prospects reckons it will continue to be the "grayest country" in 2050.<sup>18</sup> UN data shows that Japan's elderly share will make up 30.8 percent of the population (36.215 million people) in 2030 if the birth rate stays constant. In 2050, the elderly population will increase 38.632 million to total 38.9 percent of the population.<sup>19</sup> The National Institute of Population and Social Research has even more alarming figures. It puts the total number of Japan's elderly population in 2005 at 25.761 million, or 20.2 percent of the population. That figure will rise to 36.670 million in 2030 (31.8 percent) and reach 37.641 million, or 39.6 percent of the population, in 2050.<sup>20</sup>

European countries will share Japan's predicament. Overall, Western Europe's elderly comprised 17.5 percent of the total population in 2005 and that number will rise to 25.4 percent in 2030 and 30.6 percent in 2050. Germany's elderly population was 18.8 percent of the total in 2005, and it is projected to grow to 27.7 percent in 2030 and 32.1 percent in 2050. Italy's elderly made up 19.7 percent of the population in 2005, and will match Germany's 27.7 percent in 2030 and edge ahead to reach 35.2 percent in 2050. Spain's elderly share was 16.8 percent in 2005 and 24.8 percent in 2030; it is predicted to reach 36.8 percent in 2050.

As in other cases, countries with higher birth rates will have a different profile. In the United States, the elderly make up just 12.3 percent of the total population, a number that is expected to grow to 19.1 percent in 2030 and only marginally increase to 20.2 percent in 2050. That is a striking contrast with Japan and the European outliers. The elderly portion of the population in other English-speaking countries was 14.5 percent in 2005, and will climb to 22.1 percent in 2030 and 25.5 percent in 2050.

Japan's neighbors will share its woes. Even though South Korea's elderly made up just 9.4 percent of the population in 2005 – a figure substantially lower than most other developed countries – its low birth rate means that number will grow quickly: it will reach 23.4 percent in 2030 and 35.8 percent in 2050. The elderly in China comprised just 7.7 percent of the population in 2005 but that figure will more than double to 16.6 percent in 2030, and lag just below the European average in 2050 when it hits 25.0

<sup>16</sup> Population Growth Rate from 1884 to 2006 (表 2 – 5

年齢 (3 区分) 別人口および増加率: 1884 ~ 2006 年), National Institute of Population and Social Security Research, 2008 <http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2008.asp?chap=0>

<sup>17</sup> Progress of Aging, Ministry of Finance, 2006 [http://www.mof.go.jp/zaisei/con\\_04\\_g01.html](http://www.mof.go.jp/zaisei/con_04_g01.html)

<sup>18</sup> World Population Prospects, op cit.

<sup>19</sup> Ibid.

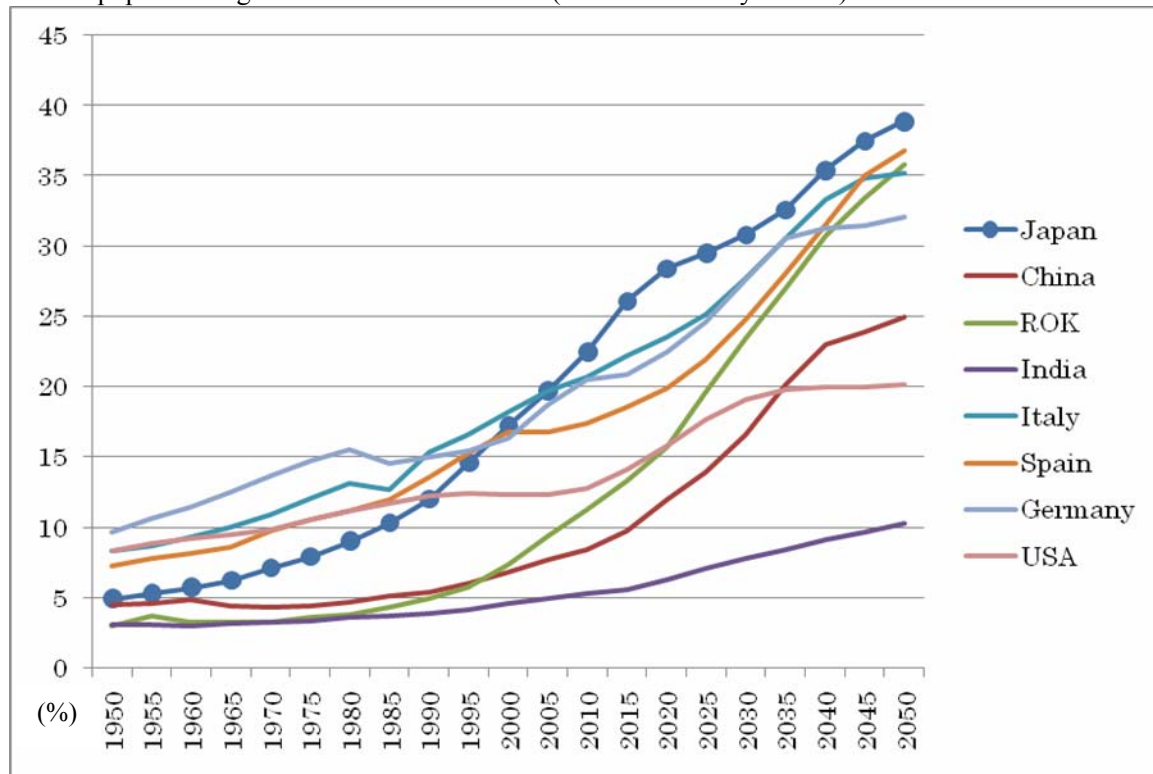
<sup>20</sup> Population Growth Rate Projection from 2005 to 2055( 2 – 7

年齢 (3 区分) 別人口および増加率の将来推計: 2005 ~ 55 年), National Institute of Population and Social Security Research, 2009, <http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2009.asp?chap=0>



percent. Alone among the rising Asian powers is India. The elderly share of its population was 5 percent in 2005 – in a league with China – but that figure will expand only slightly to 7.8 percent in 2030 and reach just 10.3 percent in 2050.

Rate of population aged 65+ from 1950 to 2050 (Constant-fertility variant)



Source: UN World Population Prospects: The 2006 Revision Database

<http://esa.un.org/unpp/p2k0data.asp>

*Decreasing working age population.* The rising “gray” population is the flipside of another worrisome phenomenon: a declining working age population. This is especially important for “pay as you go” pension systems. Ever more generous retirement packages outpace payments into the system; the current generation of workers must support the retirement of its predecessors. But a shrinking working age population means that less workers support more retirees. It is a recipe for financial bust.

The number of Japan’s workers grew for a half century. In 1950, the working population of 49.658 million represented 59.7 percent of the total citizenry. It grew 1.8 percent to 2.2 percent annually until 1965, at which point the growth rate plunged, reaching 0.29 percent in 1995. By 2000, the working age population began to shrink, a trend that continues to this day. The 2005 census put the working age population (age 15-64) at 84.422 million, 66.1 percent of the total population. In 2030 it is projected to become 67.404 million or 58.5 percent of the total population. By 2050, the number will have declined still further to 49.297 million, slightly more than half the total population



(51.8 percent).<sup>21</sup> Equally alarming, the number of children (age 0-14), is also dropping. In 2005, there were 17.585 million children in Japan, 13.8 percent of the total population; in 2030, they will comprise 11.15 million (9.7 percent of the total), and fall still further in 2050 to 8.214 million, just 8.6 percent of the entire population.

This trend creates a back-breaking pension burden for workers. In 2000, there were 3.6 members of a working population (age 20-64) to support each member of the elderly (65 and older). In 2035, there will be 1.8 members of the working population to support each member of the elderly population. By 2055, that ratio will have slipped further: there will be just 1.2 members of the working population to support one elderly member of the population.<sup>22</sup>

Again, let's turn to Europe for a comparison. Western Europe's working population of 198 million accounts for 61.1 percent of its total population. In 2030, the number of working age citizens will shrink to 185 million, or 56.4 percent of the total; in 2050 it will have fallen nearly a quarter from 2005, to 162 million, constituting 52.09 percent of total population.<sup>23</sup>

Once again, Italy, Germany, and Spain will pace Europe. Italy, which had a working population of 30.81 million in 1950 (65.4 percent of the total population), saw the number of working-age citizens rise in 2005 to 38.86 million, 66.3 percent of the population. Unfortunately, the working cohort will fall to 27.65 million, or 54.6 percent of its total population in 2050. Germany's working population was also steady, registering 67.1 percent of the population (45.87 million) in 1950 and 66.9 percent (55.25 million) in 2005. It will contrast by 2050, dropping to 56.9 percent of the population, or 39.69 million people. Spain had 18.377 million people, or 65.6 percent of the total population, in 1950 and it remained constant rate, 68.8 percent (29.837 million) in 2005. It will fall by 52.9 percent (22.129 million) in 2050. The working-age population in Italy, Germany, and Spain will contract by 26-29 percent from its 2005 base over the next 45 years. Shocking as that number may seem, Japan's drop is even more precipitous: its working population will plunge 40 percent over the same period.<sup>24</sup>

Again, the English-speaking world looks different. In the U.S., 66.9 percent of the population was working age in 2005. That number will shrink just slightly, to 61.6 percent, in 2030 and 61.1 percent in 2050. In other English-speaking countries, 60.33 percent of the total population was working age, which is projected to grow 7 percent in number (from 73 million to 79 million), even though it will drop to 56.83 percent as a share of the total population in 2030. By 2050, the total number of workers will level off at 79 million, which will constitute 54.48 percent of the total population.

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<sup>21</sup> Population Growth Rate Projection from 2005 to 2055( 2 - 7

年齢(3区分)別人口および増加率の将来推計：2005～55年), National Institute of Population and Social Security Research, 2009, <http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2009.asp?chap=0>

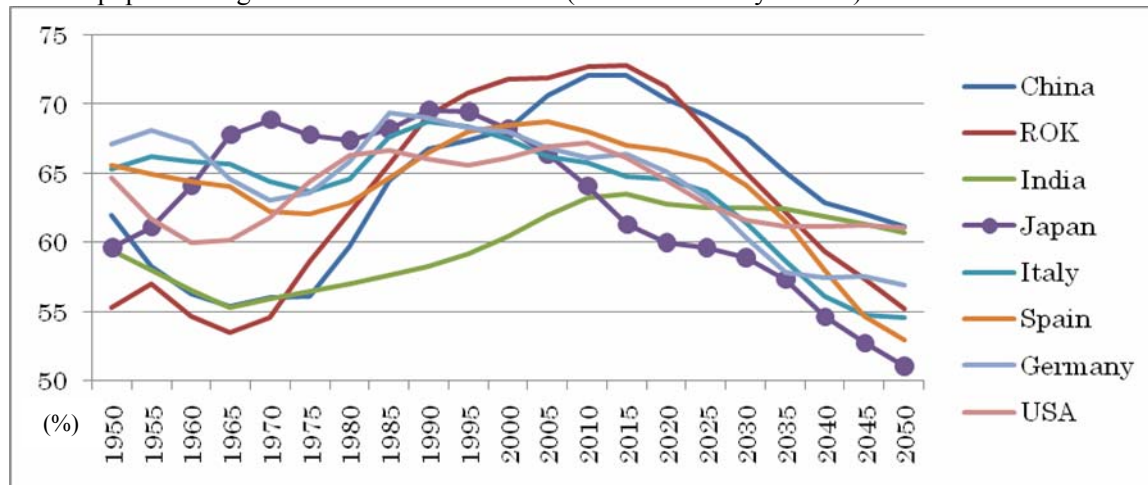
<sup>22</sup> Japan's financial situation in the future?-2008 general account, Ministry of Finance, [http://www.mof.go.jp/zaisei/con\\_04.html](http://www.mof.go.jp/zaisei/con_04.html)

<sup>23</sup> Jackson and Howe, op cit, p.43.

<sup>24</sup> World Population Prospects, op cit.

South Korea's future looks much like Japan's. Its working-age population will fall by one-third from 2005 to 2050, from 34.42 million (71.9 percent) to 22.89 million, or 55.2 percent.<sup>25</sup> China's working population almost tripled in number from 1950 to 2005, going from 343.86 million (62 percent) to 928.74 million, or 70.7 percent. It will shrink to 817.90 million (61.2 percent) in 2050. India again is the exception. Its working population has continuously expanded since 1950, going from 220.8 million (59.4 percent of the total population) in 1950 to 703.8 million (62 percent), a 319 percent jump in number. Nor is it expected to stop: in 2005, India is expected to have a working-age population of 1.407 billion, 60.7 percent of its total population.

Rate of population aged 15-64 from 1950 to 2050 (Constant-fertility variant)



Source: UN World Population Prospects: The 2006 Revision Database

<http://esa.un.org/unpp/p2k0data.asp>

## Explaining this trajectory

Low fertility rates haven't gone unnoticed. After all, "demography is destiny." Or, as another specialist put it (perhaps with a little less hubris), "demography explains two thirds of everything."<sup>26</sup> Demographers, economists, and other observers have devoted considerable time to understanding the causes of these demographic trajectories. There are several explanations, some more controversial than others.

A partial explanation for a graying population is a rising standard of living and all its accoutrements, a better quality of life, and improving health care. People live longer because they are healthier, work and life are less hazardous, and medical science can extend their lives.

<sup>25</sup> It tripled from 1950 to 2005, from 10.428 million, or 55.3 percent of the population.

<sup>26</sup> David Foot, "Boom, Bust and Echo: Profiting from the Demographic Shift in the 21st Century," cited in Deutsche Bank Research, "Current Issues: Demography Special," June 7, 2004, p. 2.

Explaining lower fertility rates is another matter. Here, explanations vary. One emphasizes economic calculations within the family, and seems to apply to most developed societies. As more children survive into adulthood and are able to support their parents in old age, there is less incentive to have as many kids. (By this logic, large families were a form of social security.) Another way of saying that is the cost-benefit calculus of having a child has shifted. Indeed, as their survival rate has increased, so has the cost of supporting a child through its “nonproductive” period. Food, school, health care all drain the family purse. This mindset is complemented by a shift in the conceptualization of the ideal family size (smaller), increasing environmental consciousness which would lead to a desire to reduce the social footprint of the family, as well as a changing set of values that puts more emphasis on the individual (which would attach more value to the loss of freedom for parents and other opportunity costs of having children).<sup>27</sup>

Similarly, modernization has led to the development and proliferation of more effective birth control techniques. More couples and individuals have access to ways to prevent pregnancy. Just as important, the social norms regarding the use of contraceptives have also changed.

Economists also blame a changing work environment. The loss of certainty regarding job prospects in Japan discourages men from marrying or from having children since they are not sure that they will be able to provide for their partner or their family. As one scholar notes, “in 2005, 30 percent of men 35–39 had not married, a 4.3 percent increase over the percent of men unmarried in 2000. Among Tokyo residents, the percentage of unmarried men was even higher, 37.9 percent. In other words, a considerable portion of Japanese men are approaching middle age without finding wives.”<sup>28</sup> According to her analysis, the primary reason for that delay is the “breadwinner expectations” placed on men. In an economy that is stagnant and offers few of the guarantees of the past, men are reluctant to marry and assume the responsibility for both of their – and their children’s – living expenses.<sup>29</sup> The “breadwinner’s blues” are almost inevitable.

Most commonly, however, the explanation for the falling birth rate, the shrinking population, and all that follows are laid at the feet of women. This is obviously true: women are child bearers and 36 percent of the youngest age cohort of women will remain childless till the end of their childbearing years.<sup>30</sup> But is also true in a nontrivial (*i.e.*, nontautological) sense. Women, especially in Japan, are marrying later in life or not

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<sup>27</sup> See, for example, “The Demographic Challenge,” Deutsche Bank Research, Sept. 6, 2002, p. 11.

<sup>28</sup> Robin M. LeBlanc, “Japan’s Low Fertility Rate: What Do Men Have To Do With It?” in *Japan’s Declining Population: Clearly a Problem but What’s the Solution?*, Woodrow Wilson International Center for Scholars, Asia Program Report, July 2008, p. 12.

<sup>29</sup> The assumption that women in Japan often quit their jobs after marriage isn’t sexist, but is empirically verified. *Ibid.*

<sup>30</sup> Cited in Leonard Schoppa, “Japan’s Declining Population: the Perspective of Japanese Women on the “Problem” and “Solutions,” *Ibid.*

getting married at all.<sup>31</sup> “In 1985, approximately 10 percent of women aged 30–34 were unmarried, but by 2005, 32 percent of women in that group were unmarried. Some of this steep trend against marriage may reflect women’s choices to marry later. Still, decline in the marriage rate among women between the ages of 35 and 39 indicates that almost one fifth of women will not be married before their fertile years have likely ended. In 2005, 18.5 percent of Japanese women in the 35-39 year-old group had never married, nearly a five-point increase in the percentage of unmarried women in the same age group in 2000, and about 10 points higher than the rates for the same age group in 1985.”<sup>32</sup> (And while a woman does not have to be married to have a child, Japan has traditionally been very inhospitable to children born out of wedlock. The rate of out of wedlock birth for Japanese women was just 2 percent in 2004, compared to 10 percent in Southern Europe and 40 percent in Northern Europe.<sup>33</sup>)

Here again, there are numerous explanations for changing preferences among women. The biggest factor is rising education levels for women and their desire to pursue a career. Similarly, a new social ethos is less critical of a woman who puts her life (and career, not necessarily the same) ahead of marriage and “a social duty to reproduce.” (In a remark that triggered a controversy in 2007, then Health Minister Yanagisawa Hakuo described women as “child-bearing machines.”<sup>34</sup> He was bitterly criticized for that remark, but it says much about the mindset of his generation.) Today, women have more options than having children and devoting themselves to household work. Perhaps most important, however, are the restricted choices that women have once they get married. They are expected to assume the primary burden for child care, husband care, and even taking care of in-laws. The infrastructure to support women in that work, or that would allow them to shift those burdens, is underdeveloped. It is little wonder then that women refuse to marry or have children when their life is so determined after those events. “Makeinu” (a “loser” dog or an unmarried woman in her 30s or older without children) became a popular word in 2004 and the TV comedy “Around 40,” which featured stories of women around the age of 40 – at a crossroads where they had to choose between having children and pursuing their careers – was a great hit in Japan in 2008. The media portrait of those women is positive. They are beautiful, energetic, and successful and are admired even though they are not married. It is understandable that some women choose to be “Makeinu” and “Around 40” rather than abandoning their career to put family as their first priority.

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<sup>31</sup> White Paper on Declining-Birthrate Society 2009 (平成 21 年版 少子化社会白書)-Chapter 1, Section 1, P.10, [http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1\\_1\\_01.pdf](http://www8.cao.go.jp/shoushi/whitepaper/w-2009/21pdfhonpen/pdf/b1_1_01.pdf)

<sup>32</sup> Leonard Schoppa, op cit, p. 11-12. LeBlanc also points out that men are delaying marriage even longer than women.

<sup>33</sup> James Raymo and Miho Iwasawa, “Bridal Pregnancy and Spouse Pairing Patterns in Japan,” CDE Working Paper 2007 -10, Center for Demography and Ecology, University of Wisconsin-Madison, May 28, 2007, [citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.76.7883&rep=rep1&type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.76.7883&rep=rep1&type=pdf).

<sup>34</sup> “Yanagisawa calls women child-bearing machines,” *Japan Times*, Jan. 28, 2007, <http://search.japantimes.co.jp/cgi-bin/nn20070128a3.html>

## Japan's response

Japan has recognized its demographic problems since 1990 when the birth rate fell below 1.57, surpassing even the low set in the “fire horse” year of 1966. Since then, councils have been established, guidelines set, and laws passed to tackle demographic issues. The Ministry of Finance Policy Research Institute has established several study groups on the declining birth rate and shrinking population. Their reports identified the cause of the declining fertility rate from the ‘70s to the ‘90s as the emerging tendency of late marriage or the refusal to marry. After the 1990s, the deteriorating economic environment and falling income among the younger generation were also blamed for negatively influencing the decision to have children.<sup>35</sup>

Various measures have been adopted to remedy this problem. The Angel Plan, the New Angel Plan, and the New New Angel Plan were enacted in 1995, 2000, and 2005, respectively. The first plan set numerical goals for child-care related projects and organizations. The number of preschools that have long hours of service and the number of after-school clubs increased. The second plan established numerical goals not only for child care but also in education and the work environment. The achievements included increasing the number of family support centers and 24-hour telephone counseling for education in addition to further increases of preschools open long hours and after-school clubs.<sup>36</sup> The third plan aimed at the independence of younger generations and working style. After the Basic Law on Measures for Society with Decreasing Birthrate (少子化社会対策基本法—*Shoushika Syakai Taisaku Kihon Hou*) and the Law for Measures to Support the Development of the Next Generation (次世代育成支援対策推進法—*Jisedai Ikusei Shien Taisaku Suishin Hou*) were adopted in 2003, successive Japanese governments have worked to develop a more “children friendly” environment for families.<sup>37</sup> The Law for Measures to Support the Development of the Next Generation forced companies with more than 301 employees to submit plans and numerical goals that would help stop the declining birth rate. When the companies meet criteria for plans and achievements, they receive certificates to put on their advertisements and products to attract and retain talented human resources.<sup>38</sup> In addition to these laws, the government established several councils to address issues and find solutions to boost the fertility rate.<sup>39</sup> Most recently, the Citizens’ Council on Social Security (社会保障国民会議—*Syakaihosyo Kokumin Kaigi*) at the Cabinet Office held its final meeting, at which Obuchi Yuko, minister of state in charge of the declining birthrate, discussed the need to

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<sup>35</sup> Press release-Study group on declining birth rate, Ministry of Finance, Aug. 11, 2005, [http://www.mof.go.jp/jouhou/soken/kenkyu/zk071/zk071\\_6.pdf](http://www.mof.go.jp/jouhou/soken/kenkyu/zk071/zk071_6.pdf)

<sup>36</sup> Regarding the establishment of the New New Angel Plan, Ministry of Health, Labor, and Welfare, April 10, 2004, <http://www.mhlw.go.jp/topics/bukyoku/seisaku/syousika/event/041026/1.html>

<sup>37</sup> The Council on Measures for Society with Decreasing Birthrate, Cabinet Office, September 2003, [http://www.kantei.go.jp/foreign/policy/index/syousika/index\\_e.html](http://www.kantei.go.jp/foreign/policy/index/syousika/index_e.html)

<sup>38</sup> Nahoko Horie, “The Law for Measures to Support the Development of the Next Generation (次世代育成支援対策推進法),” Mizuho Research Institute, August 2005, <http://www.mizuho-ri.co.jp/research/economics/pdf/research/r050801keyword.pdf>

<sup>39</sup> Index of policies for declining birthrate-(2) Information of policies relevant to declining birthrate ( (2) 少子化関連施策情報), National Institute of Population and Social Security Research, <http://www.ipss.go.jp/syoushika/site-ad/index-sj.html>

take immediate and drastic measures to increase the fertility rate.<sup>40</sup> Nippon Keidanren recently published its proposal for taxation reform for fiscal year 2009, which calls on the government to pursue innovative taxation proposals, financial policies, and social security systems that would encourage citizens to have more children. For instance, it suggested tax deductions for families according to the number of children, as well as calling for investment in housing.<sup>41</sup>

### **Impact on the economy**

Japan's demographic transformation will have profound effects on the country. The most obvious, and most studied, impact will be on the economy. A shrinking population that is "graying" will have a very different productive capacity, will have different values and priorities, and is likely to pursue very different policies. (We say "likely" because we haven't yet experienced a transformation on this scale.) Equally profound, but less well examined, is the impact these changes will have on security policy. New priorities are bound to emerge, too, with new policies as a result. This section now turns to the more strictly "economic" implications of demographic change in Japan.

A shrinking, aging society will shed wealth. "There is a broad consensus among economists that demographic changes will reduce output growth and limit increases in economic welfare. A shrinking population is associated with lower employment and output."<sup>42</sup> Japan is no exception. According to most studies and simulations, Japan's future is not bright. It will continue to be wealthy, but it will be living off that wealth, not generating new capital. As the population shrinks, it will be increasingly difficult for the country to retain its economic competitiveness. Markets will shrink and innovation will be hampered. The cost of doing business is likely to rise and foreign investment will be diverted to more dynamic markets. As GDP shrinks, tax revenues and savings will diminish. Governments will face increasingly difficult choices about priorities and the provision of services. We look at some of these developments one at a time.

*GDP.* According to IMF projections, "Japan's demographics imply that the level of real GDP will fall by a cumulative 20 percent over the next century compared with a baseline simulation with a stationary population. ... In per capita terms, GDP is expected to drop by about 5 percent relative to the baseline scenario."<sup>43</sup> In their analysis, economists at McKinsey & Co. focused on "household net financial wealth" (NFW) – the difference between a single household's assets and liabilities – which they consider the best measure of overall economic well-being. Their conclusions are grim. At the current

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<sup>40</sup> "Financial support for families raising children –People's Council on Social Security (子育て世帯に経済的支援を 社会保障国民会議分科会)," Nikkei News, Oct. 21, 2008, <http://www.nikkei.co.jp/news/seiji/20081021AT3S2101O21102008.html>

<sup>41</sup> "Keidanren Proposal for child raising asking for taxation reform in 2009 (経団連、子育て支援を提言 09年度税制改正要望)," Nikkei News, Oct. 22, 2008, <http://www.nikkei.co.jp/news/keizai/20080916AT3S1601816092008.html>

<sup>42</sup> Martin Muhleisen and Hamid Faruquee, "Japan: Population Aging and the Fiscal Challenge," *Finance and Development*, March 2001, Vol. 38, No. 1.

<sup>43</sup> *Ibid.*



trajectory, “the (NFW) growth rate will drop by 3.1 percentage points from the extrapolated historical trend line to -0.2 percent annually.”<sup>44</sup> Those numbers are even worse in real terms. “Japan’s household financial wealth will stop growing and enter an absolute decline over the next two decades, driving a 47 percent (\$8 trillion by 2024) net wealth shortfall.”<sup>45</sup> By their reckoning, Japanese NFW in 2024 will have returned to 1997 levels.<sup>46</sup>

*Savings.* Aging is associated with dissaving. This reflects the “lifecycle effect” in which household income rises with age and experience before declining in retirement. Net savings are low for the young – either they are not earning money or they don’t earn enough to offset expenses – and increase in middle age. When an individual retires, savings diminish as earnings shrink at a faster pace than consumption.

The savings rate in Japan has historically been higher than other developed countries because of government policies that encouraged saving, a compensation structure that is seniority based and quite steep, and a lack of alternative ways to increase household wealth. This system has been criticized for depressing domestic demand and creating global imbalances.<sup>47</sup> Yet, as one analysis concludes, total savings in Japan is highly sensitive to population aging.<sup>48</sup> In fact, the dissaving process is already underway: in 2004, a deputy governor of the Bank of Japan noted that “In the early 1970s, the household saving rate in Japan was more than 20 percent, yet it is now about 6 percent. The rate showed a particularly notable decline after 1998. Its current level seems to almost correspond to a new equilibrium rate under the decreasing size of the population.”<sup>49</sup> In 2006, the Japanese saving rate hit 3.2 percent.<sup>50</sup> Total savings are expected to drop 3.4 percent annually during the two decades between 2004 and 2024, with the saving rate dropping to 0.2 percent.<sup>51</sup>

There are other explanations for dissaving in Japan. Most dissenters blame the country’s anemic economy for shifting behavior among households (although they acknowledge that aging populations have an impact as well).<sup>52</sup> Economists at Mizuho Research Institute argue that demographic changes do not have the impact on saving in

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<sup>44</sup> “The demographic impact on savings and wealth: the future global capital shortfall,” McKinsey and Co., January 2005, p. 46.

<sup>45</sup> *Ibid*, Executive Summary, p. 4.

<sup>46</sup> *Ibid*, Chapter 3: “Japan: The world’s savers retire,” p. 23.

<sup>47</sup> Another consequence of depressed domestic demand has been the availability of a Japanese surplus to finance U.S. consumption, a topic taken up later in this paper.

<sup>48</sup> “Japan: the world’s savers retire,” McKinsey & Co, *op cit.* p. 18.

<sup>49</sup> “Japan’s economy under demographic changes,” Summary of a speech given by Kazumasa Iwata, deputy governor, Bank of Japan, The Australia-Japan Economic Outlook Conference, Sydney, Dec. 7, 2004.

<sup>50</sup> Points in System of National Accounts 2006-(2) Household Saving, Cabinet Office Government of Japan, 2006, [www.esri.cao.go.jp/jp/sna/h18-kaku/point.pdf](http://www.esri.cao.go.jp/jp/sna/h18-kaku/point.pdf)

<sup>51</sup> “Japan: the world’s savers retire,” McKinsey & Co., *op cit.* p. 23-25.

<sup>52</sup> See for example, “Aging and trend in household saving rate,” Norin Kinyu, November 2007, [www.nochuri.co.jp/report/pdf/n0711re2.pdf](http://www.nochuri.co.jp/report/pdf/n0711re2.pdf) and “Truth of household saving rate decline,” Daiwa Institute of Research, June 15, 2006, [www.dir.co.jp/souken/research/report/capital-mkt/capmkt/06061501capmkt.pdf](http://www.dir.co.jp/souken/research/report/capital-mkt/capmkt/06061501capmkt.pdf)

other developed countries as it does in Japan, concluding that the major cause of decreasing household savings is not aging but decreasing household income.<sup>53</sup> If the real explanation is economic, rather than demographic, circumstances, then Japan's picture can brighten. The Daiwa Institute of Research predicted in 2006 that Japan's household saving rate will recover to the mid-1990s level over the next 10 years.<sup>54</sup> Mizuho Research Institute echoed that sentiment in 2007 when it forecast that the household saving rate would gradually climb as the economy recovers and interest rates begin to increase even if the population ages.<sup>55</sup> The recent economic turmoil suggests such optimism may be premature. More significantly, a key question is whether demographic change shifts the economic equilibrium – as Deputy Gov. Iwata suggested – making recovery to previous levels harder, if not impossible. We take up this topic below.

Japanese economists also note that while household savings are down, business savings have increased steadily since 1999.<sup>56</sup> As a result, total savings in the private sector have remained constant. There are doubts, however, as to how long this situation can persist. If economic factors are an influence on household savings and businesses continue to save – rather than invest – then the overall economic situation is not going to improve and household savings won't recover. In this case, business savings don't merely compensate for personal savings, but come *at the expense of* household savings. Moreover, diminished household savings will reinforce the current tendency toward lower fertility rates because of bleak economic prospects. In short, business savings are no panacea, and may even reinforce negative trends in the economy.

The notion that Japan can avoid the impact of aging on its savings does not square with the bulk of the research. McKinsey's multi-country analysis concludes "that demographic forces – in the absence of changes in household age structure, savings behavior or rates of financial asset appreciation – will drive a global decline in net financial wealth from the historical rate of 4.5 percent to 1.3 percent. By 2026, this slowing growth will cause NFW to fall some 36 percent or by \$31 trillion below where it would have been had the higher historical growth rates persisted."<sup>57</sup> An authoritative study by CSIS surveyed the research on the impact of demographic change and concluded that "national savings rates in the future of the developed world – a future in which retirees will be abundant and young families scarce – will be considerably lower than they are today."<sup>58</sup>

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<sup>53</sup> "Is household saving rate decreasing continuously?" Mizuho Research Institute, May 2007, [www.mizuho-ri.co.jp/research/economics/pdf/research/r070501japan.pdf](http://www.mizuho-ri.co.jp/research/economics/pdf/research/r070501japan.pdf)

<sup>54</sup> Daiwa Institute of Research, *op cit*.

<sup>55</sup> Mizuho Research Institute, *op cit*.

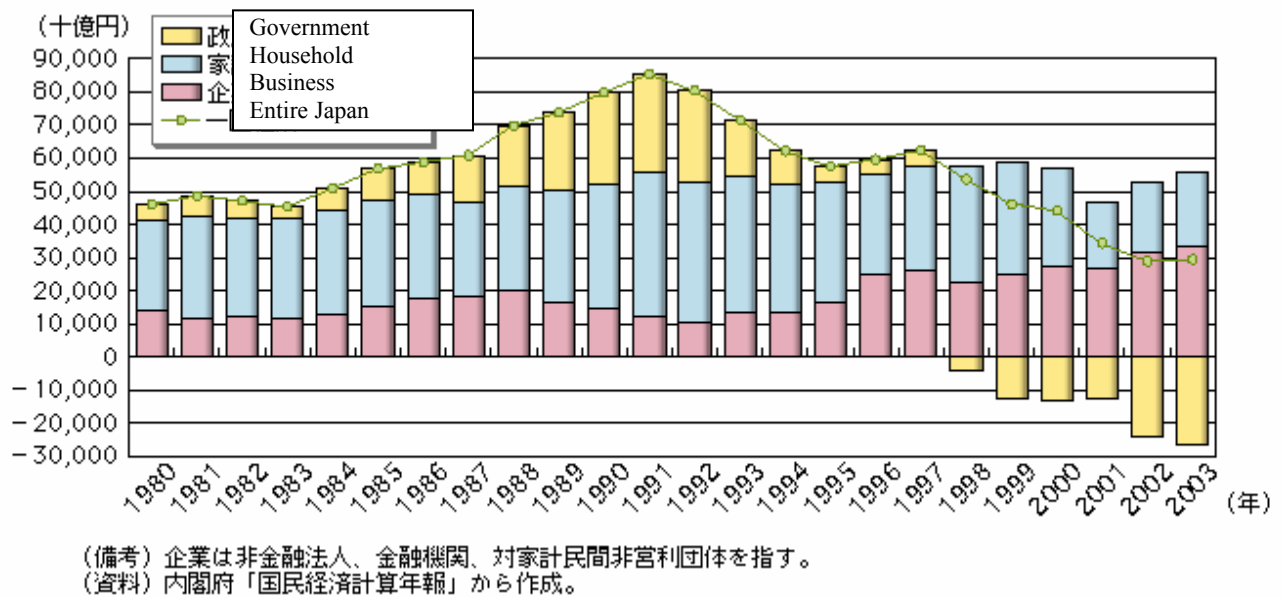
<sup>56</sup> "Japan's saving rate," Marubeni Economy Institute, Aug. 29, 2005, [http://www.marubeni.co.jp/dbps\\_data/material/maruco\\_jp/data/research/j\\_pl\\_ec/pdf/050830enomoto.pdf](http://www.marubeni.co.jp/dbps_data/material/maruco_jp/data/research/j_pl_ec/pdf/050830enomoto.pdf)

<sup>57</sup> "The demographic impact on savings and wealth: the future global capital shortfall," McKinsey & Co., *op cit*, p. 1.

<sup>58</sup> Jackson and Howe, *op cit*, p. 99.

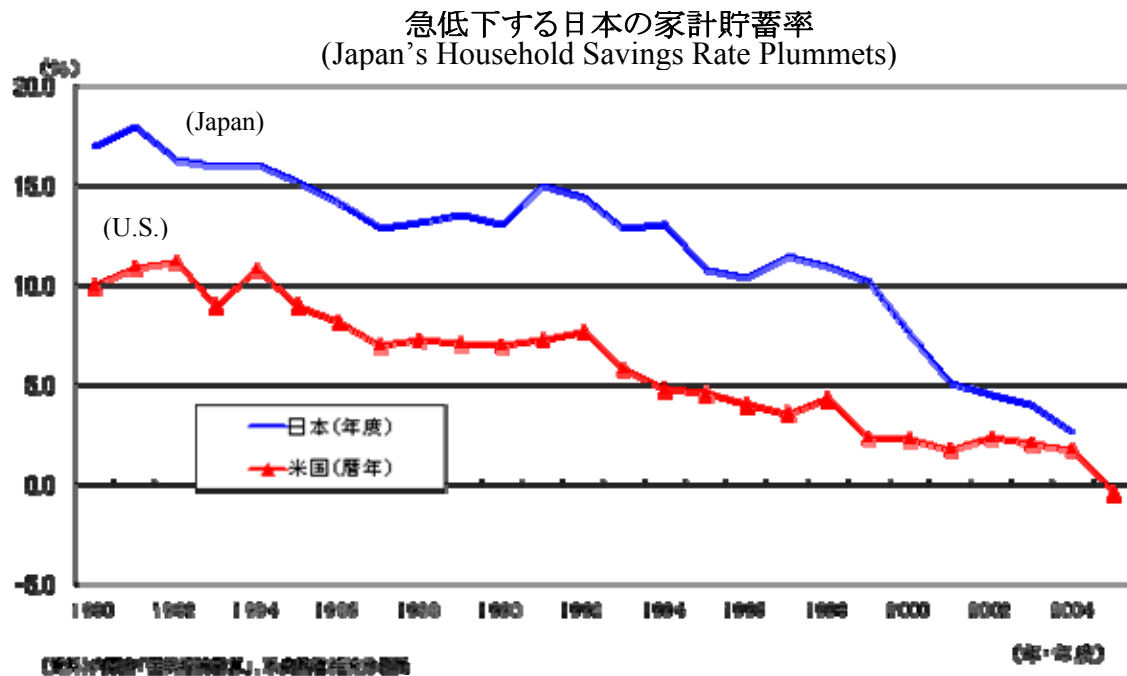


Savings in household, government, and business from 1980 to 2003 (1 billion JPN)



Source: White Paper White Paper on International Economy and Trade 2005, Chapter III: The declining and aging population in Japan and economic integration toward new prosperity in East Asia, <http://www.meti.go.jp/report/tsuhaku2005/2005honbun/html/H3122000.html>

Saving rate in Japan from 1980 to 2004 (Blue-Japan, Red-the United States)



Source: Decreasing population and implications on the society without saving, Koichi Haji, NLI Research Institute, <http://www.heri.or.jp/hyokei/hyokei91/91chochiku.htm>

*Government Budgets.* As populations grow smaller and grayer, government budgets are transformed. Most simply, a smaller population reduces the tax base. At the same time, an older population puts greater demands on social services and shifts the type of service a government provides – for example, away from education (usually for the young) and toward health care. The OECD estimates that 40-60 percent of public spending in industrialized countries is influenced by demographic developments. ... and “as a general rule, though, public spending is considerably higher for older than for younger people.”<sup>59</sup> Already, the share of government spending in Japan related to demography is increasing, climbing from 13.7 percent in 2000 to 16.7 percent in 2005.<sup>60</sup>

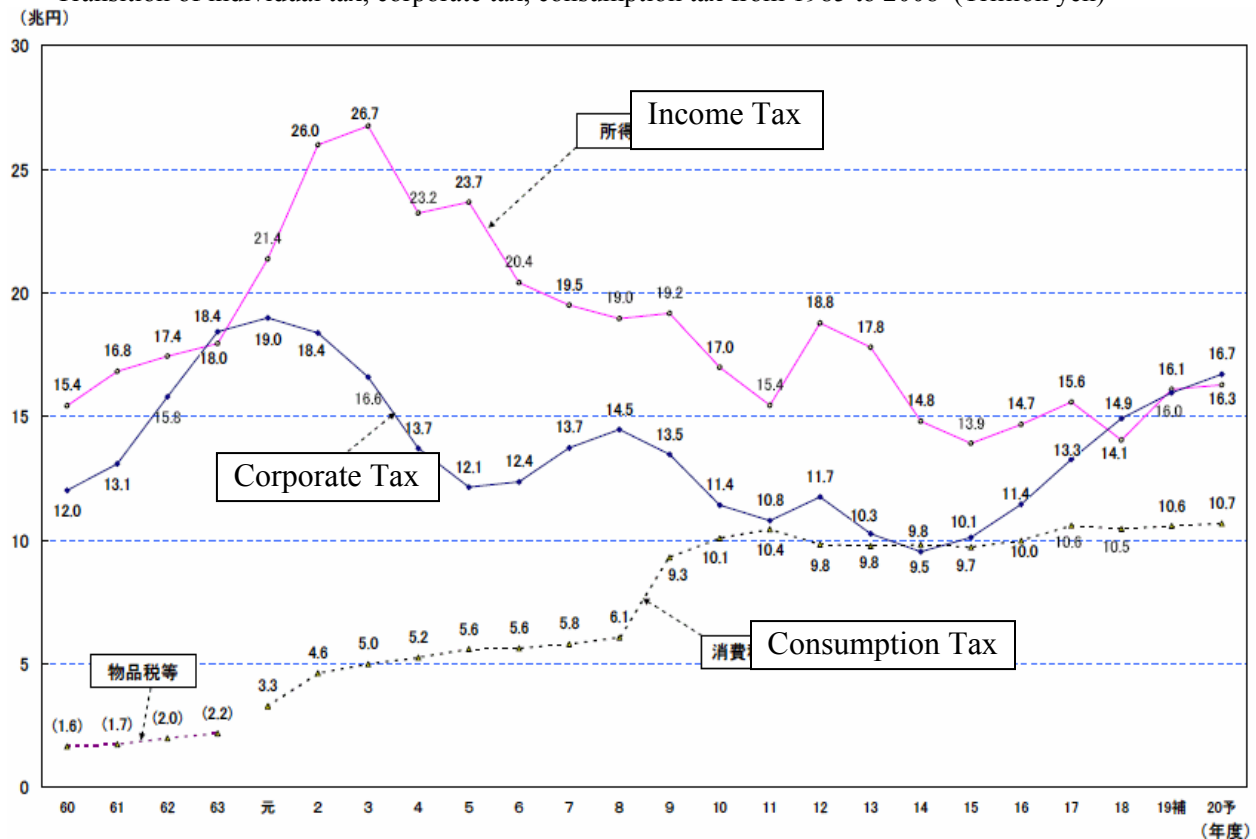
Japan’s tax structure is already shifting. According to the Ministry of Finance, since 1990 tax revenue as a whole has been constant, but the share paid by individuals has slowly declined. After two decades, individuals pay nearly the same amount of taxes as business entities. But corporate attempts to restructure and adapt to new economic circumstances have damaged the financial outlook of households. The use of contractors and part-timers workers to cut costs contributes to a worsening social ledger, insofar as it undermines financial security for those individuals as they age. Again, uncertainty and bleak prospects reinforce the tendency to avoid marrying or having children, which compounds the demographic dilemma.

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<sup>59</sup> Cited in “The demographic challenge,” Deutsche Bank Research, Sept. 6, 2002, p. 35.

<sup>60</sup> Ibid.

Transition of individual tax, corporate tax, consumption tax from 1985 to 2008 (Trillion yen)



Source: Transition of individual tax, corporate tax, consumption tax (general account), Ministry of Finance, <http://www.mof.go.jp/jouhou/syuzei/siryuu/011.htm>

Shrinking tax revenues mean that Japan will struggle to maintain the current level of public services, especially for social security. Public pension spending in Japan is predicted to grow from 8.7 percent of GDP in 2005 to 14.3 percent in 2030, and it will reach 20.2 percent in 2050. And this occurs while a shrinking younger generation has to support a growing elderly population: remember, by 2025 there will be roughly one retired person for every two people of working age in Japan, the highest old-age dependency ratio in the world.

One of the most important shifts in the structure of spending will be the growing share of wealth devoted to health care. Health benefits, which accounted for 3.4 percent of Japanese GDP in 2005, will reach 4.4 percent in 2030, and 6.0 percent in 2050.<sup>61</sup> Yet according to another estimate, at the beginning of 2009, Japan's medical expenses already amounted to about 8 percent of gross domestic product.<sup>62</sup> That figure will have to grow. One expert describes Japan's medical care system as "on the verge of collapse .... The entire system for providing medical treatment in Japan is suffering from

<sup>61</sup> Jackson and Howe, op cit, p. 65.

<sup>62</sup> Nariai Osamu, "Building a Sustainable Medical Care System," *Japan Echo*, February 2009, p. 9.

structural fatigue.”<sup>63</sup> Japan will spend more than quarter of its GDP on old-age benefits, pensions, and health care, in 45 years.

The Cabinet Office’s Citizens’ Council on Social Security has its own estimate of the costs for health care and nursing care. It reckons those expenses will more than double by 2025, from ¥91-94 trillion yen (roughly \$910 billion), from the current ¥41 trillion (\$410 billion). Insurance premiums will provide about ¥41-42 trillion (\$420 billion) and public expenses will contribute ¥39-40 trillion (\$400 billion). By those calculations, a new income source is needed to secure ¥14-15 trillion (\$150 billion) to cover government expenses. If the consumption tax is to be used, current rates have to increase 4 percent. Moreover, an increase in the insurance premium for health care and nursing is inevitable.<sup>64</sup> According to one study, “contributions to the main wage-based employee pension system are expected to increase from 17.5 percent currently to almost 30 percent over the next 50 years. ... Despite these increases, financial balance in the social security system would depend on a doubling of government transfers to more than 5 percent of GDP a year ...”<sup>65</sup> These changes promise radical shifts in Japanese spending and taxation. Competition for shrinking government revenues will intensify. Priorities will change.

*Investment.* Japan’s demographic transition has other effects on the economic. In the simplest terms, a population that is shrinking means that the overall size of its market is shrinking. As its population ages, foreign capital will be less interested in investing in Japan as there are fewer workers and fewer customers (although sectors that cater to older markets will see it as an opportunity). Some economists believe that the post-industrial economy requires constant training and acquisition and sharpening of skills. Even if the retirement age is lifted or more elderly stay in the workforce, there are questions about their suitability and adaptability to this environment. The young are more creative, more risk acceptant, and more apt to learn from mistakes. In short, youth are more entrepreneurial and more innovative. As one study concludes, “Young people play a major role with regard to spreading new knowledge in the economy, e.g. due to up-to-date training and high mobility. What is more, there is much to suggest that young people are more willing to take risks than their elders. Not only does a higher remaining life expectancy enable young people to derive greater benefit from successful investments, they also show greater resilience in the event of wrong decisions.”<sup>66</sup>

Dissaving in Japan can be compensated for by foreign direct investment (FDI) in Japan. Historically, Japan has not been open to foreign investment, however. Inward FDI in Japan is among the lowest of developed economies and the Japanese government has vowed to double such investment from its anemic level of 2.9 percent in 2007 to 5

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<sup>63</sup> Fushim Kiyohide, “A Prescription for Better Medical Care,” *Japan Echo*, February 2009, p. 10.

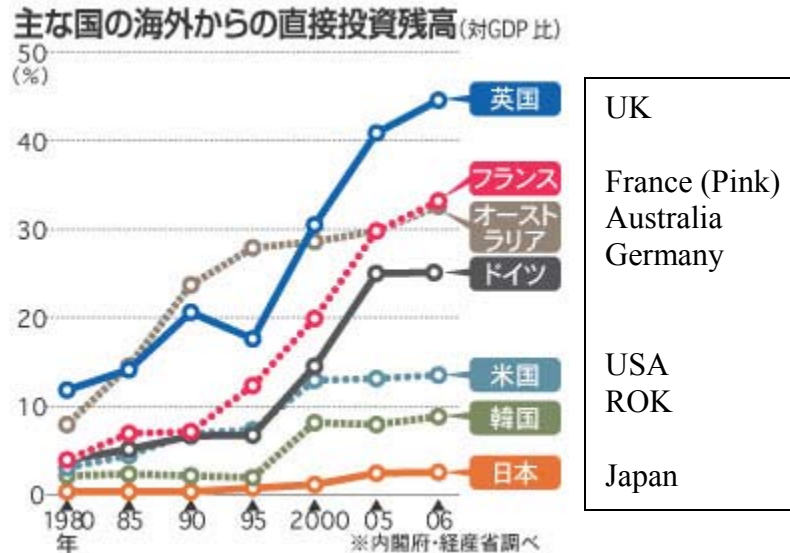
<sup>64</sup> “Consumption tax 4 percent increase necessary - Citizens’ Council on Social Security trial calculation,” Kyodo News, Oct. 23 2008, (消費税率4%引き上げ必要 社会保障国民会議が試算) <http://www.47news.jp/CN/200810/CN2008102301000854.html>

<sup>65</sup> Muhleise and Faruquee, *op cit.*

<sup>66</sup> “The demographic challenge,” *op cit.* p. 24.

percent of GDP in 2010. Thus far, that effort is flagging.<sup>67</sup> A graying, shrinking population will make that goal even harder as the country's attractiveness to foreign capital will diminish in tandem with its population, especially when there are other more attractive and dynamic markets nearby. High costs, strict regulations for foreign companies, a complicated process of reporting to the governments, and difficulty to find human resources have been major drawbacks for Japan when trying to attract inward FDI. A shrinking working-age population only diminishes its appeal over the long-term.

FDI/GDP from 1980 to 2006 (United Kingdom, France, Australia, Germany, United States, South Korea, and Japan)



Source: Stagnant foreign investment to Japan-relaxing regulations are vital, *Tokyo Shimbun* March 11, 2008, (伸び悩む対日投資 外資規制緩和が急務) <http://www.tokyo-np.co.jp/article/economics/trend/CK2008031102094377.html>

In simple terms, demographic change threatens Japan's economic competitiveness. The Japanese government is well aware of this situation. The Ministry of Land, Infrastructure, Tourism and Transportation's 2004 white paper argued that Japan's decreasing population and mature economy pose formidable challenges and require new relationships with neighboring countries to sustain economic growth.<sup>68</sup> Ministry of Economy, Trade, and Industry (METI) echoed that theme in its 2005 White Paper on International Economy and Trade. After asking how reversed economic fortunes will impact Japan's international standing and its ability to shape a regional and international order that protects its national interests, especially when other countries in

<sup>67</sup> "Stagnant foreign investment to Japan-relaxing regulations are vital," *Tokyo Shimbun*, March 11, 2008 (伸び悩む対日投資 外資規制緩和が急務) <http://www.tokyo-np.co.jp/article/economics/trend/CK2008031102094377.html>

<sup>68</sup> White Paper 2004 Chapter I New Relationship with East Asia and Policy of MLIT- Section 1 Japan's demographic transformation (国土交通省白書 2004 第 I 部 東アジアとの新たな関係と国土交通政策の展開 第 1 節 日本の人口構造の変化), MLIT, 2004, <http://www.mlit.go.jp/hakusyo/mlit/h16/hakusho/h17/html/g1031100.html>

the region are more dynamic, METI concluded that it is vital to further reinforce economic relations with East Asia.<sup>69</sup>

*Values.* An increasingly elderly population will have different set of values from a society that is considerably younger. Generally, the elderly are more conservative and more risk averse. They prefer established behavior and policies. They put a priority on safety and security. If they are living on fixed pensions, they will be especially sensitive to inflation and careful to avoid policies that create deficits and might tempt a government to print money. They are less likely to embrace change, especially if it has the potential to incur significant costs. This is problematic at a time when demographic changes seem to demand fundamental structural change in Japanese society.

Those preferences will find expression in the call for increased funds for health care and pensions, although infrastructure and transportation are also likely to be priorities too. They will demand more government services at a time of decreasing revenues. Those funds will likely come from programs for the young, such as education or preventive health care. Given the burdens placed on families to help care for the elderly, even younger voters are likely to support a larger government role here – and the reapportionment of revenues.

One area that is also likely to lose priority is defense and security. A risk-averse polity will embrace a less adventurous, even more pacifist approach to foreign policy. It will be difficult to justify or pay for new or expensive weapons systems, especially when they come at the expense of more immediate social needs. And remember: not only will there be increasing demand for age-relevant services, but the total pool of funds available for all government programs will be decreasing. Choices will be sharper. In addition, and perhaps even more important, there will be the reluctance of a society to send an increasingly precious resource – its younger, most productive members of society – into harm's way. The consequences of this will be explored later.

The aged will not be a silent majority. Studies show the elderly take politics very seriously. According to the Dentsu Institute for Human Research, interest in politics increases as people get older: in a 2005 survey, 81.7 percent of Japanese aged 60-69 and 83.4 percent aged 70-79 said that they are interested in politics. In other countries, the elderly use their free time to organize political movements. In other words, we can expect the elderly to vote for their preferences and insist on change.

## **Security Policy Implications**

*Manpower shortages and the SDF.* Most obviously, a shrinking youth population will make it hard to recruit and staff the Self-Defense Forces. Japan already has one of the lowest ratios of military personnel to overall population (even combining active and reserve personnel). In 1995, the Japan Defense Agency (now Ministry of Defense)

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<sup>69</sup> White Paper 2005 Chapter III (第3章

我が国の少子高齢化・人口減少と東アジアの新たな経済的繁栄を目指した経済統合), METI, 2005, [http://www.meti.go.jp/report/tsuhaku2005/2005honbun\\_p/index.html](http://www.meti.go.jp/report/tsuhaku2005/2005honbun_p/index.html)

Defense White Paper noted that “the male population of recruiting age (18 to under 27) ...peaked in fiscal 1994 at 9 million and is expected to decrease rapidly in and after fiscal 1995.... In the long-term perspective, the absolute size of the population that can be recruited is expected to diminish.”<sup>70</sup> That expectation has been realized. In 2009, the number of males age 18 “eligible for recruitment” is estimated to be nearly one-half the number of 1991; the number of males age 18-26 is about one-third smaller.<sup>71</sup> In 2004, the Council on Security and Defense Capabilities concluded that “The low birth rate and aging population will continue to be a fact of life in Japan in the foreseeable future. This will likely make recruitment of future SDF members more difficult. Moreover, the decrease in the consuming and producing population will result in lower economic growth and more limited national capacity to fulfill fiscal requirements, and increased spending on social welfare will crowd out expenditures for defense. Given all these long-term trends, downsizing of personnel, streamlining of equipment, and rationalization of operations will be required to make it possible for fewer resources appropriated to defense to produce greater results.”<sup>72</sup>

The 2008 Defense White Paper notes in passing the constraints imposed by a shrinking population and emphasizes reforms that the SDF has embraced to reduce “anxiety” among personnel and create a more rewarding job experience. (The White Paper itself reflects this thinking with its tales of individual experiences of SDF personnel; these voices make the military more personal and less institutional. It’s a very people-friendly document.)<sup>73</sup> But the bottom line is unmistakable. The National Defense Program Guidelines are “mindful of the seriously deteriorating fiscal conditions” ... and as a result “the Government of Japan will restrict defense expenditures by further rationalizing and streamlining defense forces.”<sup>74</sup> Reductions in the number of SDF and military personnel bound Japanese security policy and impose real limits on Japanese security contributions.

It will be difficult to make the military an appealing career option. Japan’s pacifist tradition is fundamentally antagonistic to military service, although there has been some change in recent years. Still, the SDF is already experiencing recruiting troubles; by 2008, the number of applicants applying for entry into the SDF had nearly halved from the peak years of 2002 and 2003. Japan’s countryside, with fewer opportunities for earning a livelihood, has historically been a source of military personnel; its depopulation is another squeeze. Recruiters blame the declining birthrate and the availability of more slots in higher education (created by the shrinking number of college-age students) and the SDF’s image – it is too “rigid, severe and dangerous.”<sup>75</sup> The more compelling reality is economic: competition for young workers will intensify as the youth cohort shrinks. All salaries are likely to rise as a result, and the military, straining under budget limits,

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<sup>70</sup> *Defense of Japan* 1995, Japan Defense Agency, p. 139.

<sup>71</sup> *Defense of Japan*, 2008, Ministry of Defense, p. 328 (Fig. III-4-1-3 Changes in Male Population at the Ages Eligible for Recruitment of Males to the Short-Term Service).

<sup>72</sup> Report of the Council on Security and Defense Capabilities: Japan’s Vision for Future Security and Defense Capabilities, October 2004, p. 27.

<sup>73</sup> *Defense of Japan* 2008, MOD, p. 338 and throughout.

<sup>74</sup> Quoted in *ibid.*, p. 404.

<sup>75</sup> “Pacifist Japan’s military goes hip to find recruits,” AFP, Nov. 1, 2008.



will be hard pressed to keep pace with the private sector. Finally, there will be increasing reluctance to put the nation's most precious resource – its youth – in harm's way.

*Decreasing defense budget.* Most obviously, shrinking revenues will constrain defense spending. Defense-related expenses have consumed 5-6 percent of Japan's total government budget and hovered around 1 percent of GDP since 1975.<sup>76</sup> (In 1976, the Miki administration set the ceiling on defense spending at 1 percent of GDP to prevent the country from expanding its military capabilities. In 1987, the Nakasone administration abandoned this policy but the ceiling has remained in place since then.<sup>77</sup>) Japan's defense expenditures have decreased by approximately 4 percent from ¥4938.5 billion (about \$55.6 billion) in 2002 to ¥4742.6 billion (\$53.41 billion) in 2008.<sup>78</sup> That trend is likely to continue given stagnant economic growth (and the recession that looms through 2009), a projected drop in tax revenue, and increasing outlays for old age benefits. Ever keen to toe the fiscal line, the Ministry of Finance has since 2004 proposed drastic defense cuts.<sup>79</sup>

Holding defense spending to 1 percent of GDP is still quite generous considering Japan is the second largest economy in the world. Defense spending in 2008 totaled \$53.4 billion, giving Japan the sixth largest military budget (as a percent of GDP, Japan ranks 149, however). Compared to its neighbors, Japan's defense budget is almost twice that of South Korea (\$28.9 billion, and 2.7 percent of GDP) and is overshadowed by China's \$61 billion defense budget, which was 4.3 percent of GDP in 2006. The comparison with China is especially alarming: the Peoples Liberation Army has enjoyed more than a decade of double-digit defense budget increases and is acquiring power projection capabilities.<sup>80</sup> The 2008 Defense White Paper notes that "there is concern about how China's military strength will impact regional situation and Japan's security..."<sup>81</sup>

But demands for funds will mount. New security threats will require new defense capabilities. Defense forces throughout the region are modernizing; new weapons and weapons systems are increasingly sophisticated and expensive. In other words, providing for the national defense is getting more urgent and more expensive at the very time that Japan has less money to spend. And historically, Japan has not spent much on defense R&D – just 2-3 percent of total defense expenditures. (The U.S., in contrast, spends about 15 percent of its defense budget on R&D.)<sup>82</sup> Tight budgets will become even

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<sup>76</sup> Transition of defense related expenses, Ministry of Defense, 2007

[http://www.clearing.mod.go.jp/hakusho\\_data/2007/2007/html/js222000.html](http://www.clearing.mod.go.jp/hakusho_data/2007/2007/html/js222000.html)

<sup>77</sup> How to develop policy for defense industry, Defense Research Center, Yoshio Shouno, 2003

<http://www.drc-jpn.org/AR-7J/syouno-03j.htm>

<sup>78</sup> See the appendix for more details. Transition of defense related expense from 1998 to 2008, Ministry of Defense, 2007 [http://www.mod.go.jp/j/library/archives/yosan/2008/yosan\\_gaiyou.pdf](http://www.mod.go.jp/j/library/archives/yosan/2008/yosan_gaiyou.pdf)

<sup>79</sup> Budget for next year, Dec. 16' 2003, Asahi Shimbun,

<http://www.asahi.com/special/yosan/TKY200312150195.html>

<sup>80</sup> Questions surround China's defense budget. These numbers provide a sense of scale, which is the point here. For more details, see "China's Military Modernization," in *China's Rise: Challenges and Opportunities*, C. Fred Bergsten, et al, Washington D.C., 2008, pp. 191-208.

<sup>81</sup> *Defense of Japan* 2008, p. 49.

<sup>82</sup> See for example, Oren Setter and Asher Tishler, "Budget Allocation for Integrative Technologies: Theory and Application to the U.S. Military," April 12, 2005, p. 1.



tighter as tax revenues shrink, an aging population gives priority to other issues, and personnel costs increase in a shrinking labor market. Some in Japan already criticize the commitment to build a missile defense system for depriving other parts of the SDF of badly needed funds.

*Procurement and defense industries.* A shrinking defense budget has other implications. One of the most significant is its impact on defense industries. Official reports acknowledge the need for increasing efficiency in defense procurement as revenues shrink. Thus far, Japan has not put a premium on maximizing the bang it gets for its buck. Rather, procurement decisions have reflected the need to maintain indigenous technological and production capacity, both to avoid being reliant on foreign technologies as well as to support research and development – and industries – at home.<sup>83</sup> A result of this strategy has been high costs: one authoritative study concluded that the cost of Japan's domestic development and production is as much as three times that of foreign systems.<sup>84</sup> More than a decade ago, analysts warned "force posture and mission capabilities will likely be impaired as high costs and recalcitrant technologies set limits on the number of indigenous systems and their performance."<sup>85</sup> That luxury will become increasingly expensive in the future. In fact, "the Japanese Defense Agency concluded in 2005 that Japan's defense production base is 'seriously weakening'."<sup>86</sup>

A certain amount of inefficiency was tolerated as a result of Japan's decision to limit weapons exports and the related restrictions on technical exchange and cooperation with other countries. This policy, in place since 1967 with some minor modifications, has restricted markets for Japanese weapons manufacturers, reducing if not eliminating economies of scale.<sup>87</sup> The burden has been on Japan's defense authorities to compensate for those losses. But now the emphasis is on belt tightening, not compensation. The Ministry of Defense has declared its intention to reduce costs by 15 percent for procurement, R&D, and maintenance of SDF armaments by 2011 from 2006 levels.<sup>88</sup> As part of that effort, the Equipment Procurement Office was established in July 2006 to increase procurement efficiency.

In this environment, Japan has several options. The first is perhaps easiest: loosen restrictions on military exports. In 2004, Nippon Keidanren proposed just that<sup>89</sup> and pressure to move forward continues. But, reports one MoD insider, "This is government and political policy, not a commercial policy, and I don't believe that it will be changed in

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<sup>83</sup> See for example, *Defense of Japan*, 2008, p. 377. This policy is called *kokusanka* (国産化).

<sup>84</sup> Arthur Alexander, "Of Tanks and Toyotas: An Assessment of Japan's Defense Industry," Rand Note, 1993, p. vi.

<sup>85</sup> Ibid.

<sup>86</sup> "Delivering Defense Industrial Change," edited by Alexander Neill, Jonathan Eyal, and John Hemmings, Royal United Services Institute, London, UK, 2008, p. 19.

<sup>87</sup> Jon Grevatt, "Japanese military ban stifling business, warns industry," *Jane's*, Feb. 8, 2008.

<sup>88</sup> *Defense and Budget 2009* (わが国の防衛と予算 2009), MOD, [http://www.mod.go.jp/j/library/archives/yosan/2009/yosan\\_gaiyou.pdf](http://www.mod.go.jp/j/library/archives/yosan/2009/yosan_gaiyou.pdf)

<sup>89</sup> Future of maintaining defense ability -to improve defense industry and technological basis- (今後の防衛力整備のあり方について—防衛生産・技術基盤の強化に向けて), Nippon Keidanren, July 20, 2004, <http://www.keidanren.or.jp/japanese/policy/2004/063.html>

the near future. We are very careful and serious about the non-export of weapons.”<sup>90</sup> A second option is increasing reliance on foreign suppliers. This is likely but a diminished indigenous production capacity shifts the terms of bargaining among buyers and sellers. In short, this could lead to greater conflict between Japan and its weapons suppliers. A third option is more troubling: Japan foregoes some defense acquisitions and slows modernization efforts.

*Shrinking ODA budgets.* Diminishing resources also limit Japan’s Official Development Assistance (ODA). For Japan, a country that has pressed the idea of comprehensive security, ODA is far more than just “foreign aid.” As the Japanese government explains, ODA expedites mutual understanding, fosters ties, and expands Tokyo’s influence in Asia. Japan has helped develop infrastructure that attracts investments and human resources and facilitates production in agriculture and many other fields.<sup>91</sup> ODA has been the means by which Tokyo has extended its economic influence throughout Asia (and the world), a tool to promote development and security, as well as a source of considerable diplomatic clout and prestige. As the Ministry of Foreign Affairs notes, ODA “has created trust and friendliness towards Japan, and is a great asset for Japanese diplomacy. In other words, Japan is formulating a desirable international environment through international cooperation centered on official aid.”<sup>92</sup>

Japanese took great pride in their country’s status as the world’s leading provider of ODA from 1991 to 2000. Yet “the lost decade” has hammered Japan’s resources and the ODA budget has declined about 40 percent from 1997 to 2008. By 2006, Japan was ranked third as a provider of assistance, had fallen to fifth in 2007, and the ODA budget is expected to continue to shrink: according to the Basic Policies for Economic and Fiscal Management and Structural Reform in 2006, the ODA budget in the general account will decrease 2 to 4 percent until 2011.<sup>93</sup>

Japanese acknowledge the impact of cutting ODA. Former United Nations High Commissioner for Refugees Ogata Sadako argues that Japan’s ODA budget has fallen below levels suitable for a country of Japan’s size, undermining its image and authority.<sup>94</sup> Nor are the effects just symbolic: if Japan’s assistance has underwritten projects critical to development in Asia and elsewhere, then cutbacks harm the prospects of recipient nations and undermine regional security. Hopefully, other donor countries will be able to make up for Japanese cuts. That will mitigate the damage done by Japan’s retrenchment, but it also means that Japan’s status will be diminished relative to that of those other donors.

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<sup>90</sup> Grevatt, op cit.

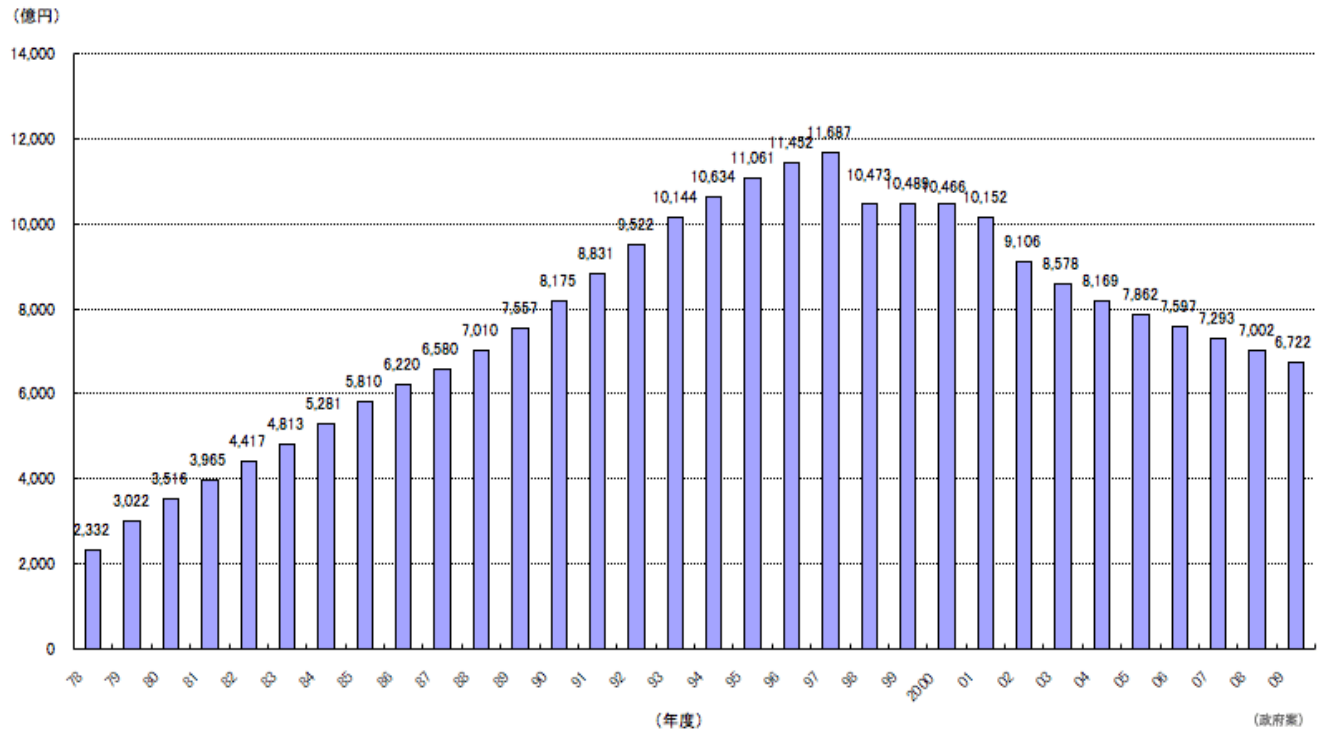
<sup>91</sup> Achievement of Japan’s ODA, Economic Development in East Asia and Japan’s ODA, MOFA, [http://www.mofa.go.jp/MOFAJ/gaiko/oda/shiryo/pamphlet/oda\\_50/seika2.html](http://www.mofa.go.jp/MOFAJ/gaiko/oda/shiryo/pamphlet/oda_50/seika2.html)

<sup>92</sup> White Paper on Official Development Assistance, MOFA, 2007.

<sup>93</sup> ODA, MOFA, [http://www.mofa.go.jp/mofaj/gaiko/oda/nyumon/hayawakari/hayawakari\\_4.html](http://www.mofa.go.jp/mofaj/gaiko/oda/nyumon/hayawakari/hayawakari_4.html)

<sup>94</sup> Interview with Sadako Ogata, JICA, Sept. 30, 2008, <http://www.jica.go.jp/about/president/message/20080930.html>

## Transition of Japan's ODA Budget



Source: ODA Budget, MOFA, 2009, <http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/yosan.html>

Financial limits don't have to define Japanese ODA contributions. Japan should shift toward nonmonetary aid, offering technological cooperation or deploying its growing number of retired individuals as a form of human support. In fact, the knowledge and experience of older Japanese are well suited to the needs of less developed countries: in many cases, the most important component of capacity building is developing human skill sets rather than building physical infrastructure.

*United Nations peacekeeping operations.* Peacekeeping operations (PKOs) play increasingly important roles in international security.<sup>95</sup> In 2008, the United Nations had 17 peacekeeping missions in the field; 63 such missions have been dispatched in total. Given Japan's desire to obtain a permanent seat on the UN Security Council – as well as the need to make contributions befitting the world's second largest economy – a more visible presence in peacekeeping missions is considered necessary. Japan is the second-

<sup>95</sup> Reduction in SDF Land Forces-meeting for new National Defense Program Guideline which will be submitted in June, Jan. 6' 2009, <http://www.hokkaido-np.co.jp/news/politics/139645.html>

Economic and Social Research Institute, Cabinet Office, March 2006, [http://www.esri.go.jp/jp/prj-2004\\_2005/kankyoku/kankyoku17/04-1-S.pdf](http://www.esri.go.jp/jp/prj-2004_2005/kankyoku/kankyoku17/04-1-S.pdf) [http://www.esri.go.jp/jp/prj-2004\\_2005/kankyoku/kankyoku17/syousai.html](http://www.esri.go.jp/jp/prj-2004_2005/kankyoku/kankyoku17/syousai.html)

<sup>95</sup> Defense White Paper 2008 (平成 20 年度防衛白書、防衛省・自衛隊の職員の募集・採用) [http://www.clearing.mod.go.jp/hakusho\\_data/2007/2007/html/j3411100.html](http://www.clearing.mod.go.jp/hakusho_data/2007/2007/html/j3411100.html)

ranking contributor to the UN PKO budget, providing 16.6 percent of the total.<sup>96</sup> To date, however, Japan has dispatched just 36 people, a mere 0.04 percent of the total, ranking it 83<sup>rd</sup> among 119 nations.<sup>97</sup> That is unlikely to increase as the SDF downsizes.

While Japan tends to shy away from direct involvement in conflicts, PKO may be an exception. According to a 2008 Cabinet Office survey, more than 76.7 percent of Japanese citizens back continuous contributions in PKO.<sup>98</sup> Such contributions are limited by Article 9 of the constitution, but that has not proven insurmountable. More significant, however, are the demographic trends that will shrink the size of the SDF and will make manpower contributions to PKO even more difficult.

### **Not all is lost, however**

While the negative implications of Japan's "graying" garner the most attention, there are several potentially beneficial outcomes as well. Each involves "soft power" and could provide some international status and influence for a country that is losing leverage by most indices of power and influence.

*A greener society.* An older, "grayer" Japan is likely to be a better steward of the environment. A shrinking Japanese population is likely to reduce its "footprint" on the planet: less people consume fewer things. As overall consumption diminishes, Japan will need fewer natural resources. Studies also show that the elderly as a whole consume fewer resources than other age cohorts. (Consumption as a whole may increase, but that tends to be consumption of services, not goods). In particular, older populations are less mobile, cutting transportation costs. In a recent report, the Japan Atomic Energy Agency estimated the country's population in 2100 would be 64.07 million people, but predicts domestic energy consumption would shrink 42 percent below the level of 2000, given such factors as a decrease in the population and energy-conservation efforts.<sup>99</sup> Depopulation is likely to encourage more people to move to the cities, encouraging more efficient utilization of resources as population density increases and dispersion of individuals is reduced.

This is likely to reinforce the "green" predilection that already exists among Japanese. Surveys show the Japanese are proud of their environmental record and like to think they have a special affinity with nature. A longer lifespan should encourage Japanese to make environmental protection an even higher priority -- they will be around longer to enjoy the green. A greener Japan will also set an example for other countries as environmental issues assume greater importance on the global agenda.

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<sup>96</sup> FACT SHEET United Nations Peacekeeping, <http://www.un.org/Depts/dpko/factsheet.pdf>

<sup>97</sup> "Japan's PKO," Mainichi Press, Nov. 11, 2008, <http://www.the-miyanichi.co.jp/contents/index.php?itemid=12514&catid=15>

<sup>98</sup> Opinion survey regarding foreign policy, Cabinet Office, October 2008, <http://www8.cao.go.jp/survey/h20/h20-gaiko/2-3.html>

<sup>99</sup> Japan Atomic Energy Agency estimates number of nuclear power plants to increase to 231, degree of dependence on oil at 0% (原研機構：2100年「原発231基、石油は0%」と試算), Mainichi JP, Oct. 16 2008 <http://mainichi.jp/select/wadai/news/20081017k0000m040118000c.html>

*Ending a historical legacy.* Despite a half century of foreign policy shaped by its Peace Constitution, Japan's history of imperialism continues to throw a long shadow over Tokyo's foreign relations.<sup>100</sup> While fears of remilitarism are unfounded, there remains a kernel of doubt about Japanese intentions in the region. (In some cases, fears are whipped up by political opportunists in neighboring countries, but exaggerations only work if there is soil for them to take root). A graying, aging Japan, unable to fund or staff its military, can no longer constitute a threat – real or imagined – to its neighbors. Demographic change may finally put that bogeyman to rest, eliminate an excuse that other countries use to beef up their own militaries, and allow Tokyo to get the attention it deserves for 60-plus years of contributions to peace in Asia and the world.

*Setting an example for the world.* As the statistics at the beginning of this paper make abundantly clear, aging is a problem that most developed nations will soon encounter. Japan is facing these challenges first. If the country can successfully respond, it can become a model for other nations. In many ways, Japan is better suited than many other countries to adapt to these conditions. Social mores already favor the elderly and there is a presumption about generational care for the elderly. The population is relatively dense and there is a good mass transportation system. Of course, every society is different and each will have to fashion a response that is best suited to its particular circumstances. But policy frameworks and technological responses can be copied and adapted. If Japan can lead the way, it will again acquire “soft power” as other nations look to it for guidance as they cope with this challenge.

Success in navigating in this social transition is likely to mean that security dilemmas will intensify, however. Laying the foundation for a gray society will require a substantial reallocation of resources; Japan is unlikely to be able to afford both defense modernization and social restructuring.

### **Japan's policy options**

How will Japan respond? There are four basic options. They are not mutually exclusive and Tokyo is already pursuing several of them. Unfortunately, progress to date does not bode well for the success of these efforts to stem the demographic tide.

*Immigration.* As its population shrinks, Japan can accept foreigners, making up for a looming Japanese labor shortage with “imports.” This is a common response in many countries – the U.S., the U.K., and Germany have maintained “open doors” to ensure a steady supply of labor. There are a number of problems with this option. First, the scale of immigration that would be needed is estimated to be as high as 20 million people, a staggering number for any country but unthinkable for Japan. The total number of foreign permanent residents in Japan just surpassed 2 million. Experts estimate that Japan can't even absorb 400,000 people a year.<sup>101</sup>

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<sup>100</sup> Emma Chanlett-Avery, CRS Report *The Changing U.S.-Japan Alliance: Implications for U.S. Interests*, Jan. 10, 2008 <http://www.fas.org/sgp/crs/row/RL33740.pdf>

<sup>101</sup> Sakanaka Hidenori, “The Future of Japan's Immigration Policy: a Battle Diary,” *Japan Focus*, (<http://www.japanfocus.org/products/details/2396>)

The Japanese have already debated this option – and the results are not encouraging. Negotiations on a free trade agreement with the Philippines were delayed over provisions to allow Philippine nurses and caregivers into the country. Ultimately, it was decided to allow just 200 nurses and 300 caregivers a year, a veritable drop in the bucket given the country's needs. (Credit the opposition of the Japan Nurses Association, which worries about foreign workers lowering its members' income.) In late 2008, Japan approved a law that would offer citizenship to children born out of wedlock to Japanese fathers who acknowledge them, regardless of the nationality of their mothers. (This law was in response to a claim by 10 children, fathered by Japanese and born to Filipino women; previously, a child could only claim citizenship if the father acknowledged paternity before birth or later married the mother.) The debate was contentious and a considerable amount of the discussion focused on the feasibility of DNA testing to prove paternity, although the law now does not mandate the test.<sup>102</sup> The heat resulting from this debate was, by any measure, out of proportion to the facts driving the legislation. Simply put, Japan remains deeply suspicious of foreigners and very concerned about the impact of reform intended to facilitate the assimilation of foreigners in the society. The likelihood of large-scale immigration is low.<sup>103</sup> In fact, METI concludes that "it is not realistic to make 'the maintenance of the work force' a main goal of policies related to foreign workers."<sup>104</sup>

This sensitivity makes one solution to a declining defense force – paid foreign soldiers, or mercenaries – virtually impossible to accept. While many countries pay foreign nationals to join their defense forces, this usually comes with the promise of citizenship. Japan is unlikely to make that offer: individuals willing to serve as soldiers are unlikely to conform to Japanese ideals of a good citizen – "Are these the people we *want* to invite into our society or to be considered as Japanese?" Moreover, it is unlikely that Japanese, given their pacifist sentiments, would offer citizenship (something highly valued) in exchange for military service (something that is not).

*Give women better life choices.* This is the most obvious solution to Japan's woes – and the only one that actually increases the population to overcome the problems identified above. Providing women with better choices would eliminate an important obstacle to their decision to marry and have children. Motherhood and having a career should not be mutually exclusive options. Women need to feel that having a family does not foreclose choices. In some cases, they may even decide after giving birth that they prefer to be stay-at-home mothers rather than women with careers. But they must have meaningful choices.

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<sup>102</sup> The citizenship law has been revised, Ministry of Justice, <http://www.moj.go.jp/MINJI/minji163.html>

<sup>103</sup> In addition, Japan has been censured for its hostility to foreigners. See, Doudou Diene, "Racism, Racial Discrimination, Xenophobia and all Forms of Discrimination: Report of the Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance, Mission to Japan," 24 Jan. 2006, at [daccessdds.un.org/doc/UNDOC/GEN/G06/103/96/PDF/G0610396.pdf?OpenElement](http://daccessdds.un.org/doc/UNDOC/GEN/G06/103/96/PDF/G0610396.pdf?OpenElement)

<sup>104</sup> White Paper on International Trade and Industry 2005, p. 58.



Tokyo has already attempted to do that with the Angel Plans identified above. But the continuing decline in the birth rate is proof that the reforms have not yet gone far enough. The reluctance to adopt more sweeping and meaningful reform is the result of a deep-rooted conservatism that fiercely resists change, especially of this nature. (What is more fundamental to a society than how it sees roles for women?) Given the years of attention to Japan's demographic prospects and the proof that the warnings are not exaggerated, the failure to fashion a more significant response is evidence of how entrenched these beliefs are. Japan's "choice" is painfully evident: it prefers a shrinking, graying population to potentially wrenching social change.

Moreover, the question now is whether Japan has passed the "tipping point" and it is too late to adopt change that will reverse the decline. Demographers believe that trends change baselines. Social preferences evolve over time. What is considered "normal" or desirable will shift as a society becomes more comfortable with alternative notions of "approved behavior." Shrinking fertility rates reflect that evolution: developed societies no longer expect families to be large. Japan faces a situation where a declining population could become the norm and the next generation feels no pressure to reverse that trend. That would constitute a tipping point.

Tipping points are created in other ways. Demographers also argue that time lags in reversing population trends and the social adjustments that occur as a society adapts to them could prevent Japan from changing course. Not only does the universe of potential mothers (and fathers) shrink, but the country loses the infrastructure needed to support a growing population. Providing incentives to have more children is insufficient if critical services, such as education and health care, are not available. That process is also underway.

A '*silver bullet*'? As the supply of labor dwindles, Japan will look to technology to make up the difference. That process too has already started. Successive Japanese governments have focused on innovation and high technology to sustain the country's prosperity. One recent example of this approach is "Innovation 25," a program advocated by former Prime Minister Abe Shinzo. It anticipates the world in 2025, taking Japan's declining population and rapid aging into account. The starting point for Innovation 25 is the belief that innovation is the only way to sustain growth in Japan.<sup>105</sup> So, for example, it emphasizes robotic systems for households. Today, Japan is considered a world leader in the development of robots, but critics argue that the research is poorly suited to solving looming social problems.<sup>106</sup> Moreover, while Innovation 25 focuses on the social and economic aspects of innovation, it does not discuss such strategies in the context of Japan's defense and military capabilities.

The 2004 National Defense Program Guidelines highlighted the need for defense policy to take into account Japan's decreasing population of young people and its deteriorating fiscal situation. It endorsed "multi-functional, flexible, and effective defense forces ... equipped with state-of-the-art technologies and intelligence capabilities .... In

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<sup>105</sup> Points in Innovation 25, <http://www.cao.go.jp/innovation/innovation/point.html>

<sup>106</sup> Vaclav Smil, *Global Catastrophes and Trends: The Next Fifty Years*, MIT Press, 2008, p. 109.

building such a defense force ... Japan will rationalize and streamline personnel, equipment, and operations so as to attain greater results with the limited resources that are available.<sup>107</sup> At the recent unveiling of a new weapon system, an officer at the Technology Research and Development Institute explained that cutting-edge high-tech items will help substitute for a shrinking SDF.<sup>108</sup>

That logic is impeccable. Finding the funds to make it work is another matter. Defense budgets will be shrinking. Carving out funds for research and development, which has no guarantee of paying off, will be increasingly difficult. Defense industries will be increasingly difficult to sustain. Neither is there likely to be spillover from the civilian economy: it too will decline as the population shrinks and ages. And as noted, overall innovative capacity is likely to decline as well.

*Going nuclear.* There is one technological avenue that could be feasible: the nuclear option. Japan is by many accounts a “virtual nuclear power” that could develop a nuclear arsenal if it desired. In 1994, then Prime Minister Hata Tsutomu noted that “it’s certainly the case that Japan has the capability to possess nuclear weapons but has not made them.”<sup>109</sup> The president of the opposition Democratic Party of Japan (DPJ) Ozawa Ichiro said in 2002 that “Japan can possess a nuclear warhead if it wants.”<sup>110</sup> And in October 2006, then Foreign Minister Aso Taro expressed his concern about Japan’s passivity regarding the development of nuclear weapons when its neighbors have them. Other assessments are not so sanguine and conclude that the country’s very advanced nuclear energy program lacks “several prerequisites for a full-scale nuclear weapon deterrent.”<sup>111</sup>

The biggest obstacle to the development of a nuclear weapons capability is the belief that such an option is not in Japan’s national interest. Past studies of the feasibility of that decision conclude that Japan doesn’t have the strategic depth to absorb a nuclear attack; that going nuclear would damage Japan’s international reputation; that acquiring a nuclear weapon would trigger an arms race in Northeast Asia, as well as likely end the alliance with the United States. On the popular level, there are powerful social norms – perhaps more rightly considered taboos – that support the decision to remain nonnuclear. This mindset has been nurtured by a left-leaning education system, as well as the searing historical experience of World War II.

Nonetheless, it is important to recognize that at one level the decision to forgo nuclear weapons is based on a rational calculation of costs and benefits that depends on

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<sup>107</sup> Regarding National Defense Program Guideline, Prime Minister of Japan and His Cabinet, Dec. 10· 2008, <http://www.kantei.go.jp/jp/kakugikettei/2004/1210taikou.html>

<sup>108</sup> MOD-developing individual control system to realize Gamdum (防衛省、先進個人装備システム開発へー“ガンダム”実現へ一歩前進) Nov. 7· 2007, [http://robonable.typepad.jp/news/2007/11/20071108\\_0599.html](http://robonable.typepad.jp/news/2007/11/20071108_0599.html)

<sup>109</sup> Cited in *Japan’s Nuclear Future: Policy Debate, Prospects, and U.S. Interests*, by Emma Chanlett-Avery and Mary Beth Niktin, Congressional Research Service Report, May 2008, p. 6.

<sup>110</sup> “Obama’s America, Pay attention to transition of US nuclear policy,” *Daily Yomiuri*, Nov. 7· 2008, [http://www.yomiuri.co.jp/feature/20081107-5171446/fe\\_081113\\_01.htm](http://www.yomiuri.co.jp/feature/20081107-5171446/fe_081113_01.htm)

<sup>111</sup> *Japan’s Nuclear Future*, op cit.



circumstances.<sup>112</sup> But circumstances can change. They already are. Some observers and a growing number of Japanese worry that the country's pacifist, anti-nuclear mindset is eroding. They note the readiness of politicians to propose such an option – or even a debate about the option – and the fact that such a suggestion no longer kills careers as in the past.

The most important factor is the perception of the U.S. alliance and Japan's belief that its ally remains committed to its defense. If decision makers in Tokyo were to believe that Washington was wavering, then they might be tempted to make that particular leap. The key question is how robust the alliance will be as Japan gets older, its military shrinks, and its economy runs out of steam. Will the U.S. force Japan's hand?

*Neutrality or ....* Of course, all the other arguments in favor of eschewing the nuclear option remain, regardless of the state of the alliance. And, the prospect of greater instability as a result of such a move, coupled with increasing uncertainty about the U.S. commitment to its defense could push Japan into another direction: neutrality. It can be argued that Japan's history predisposes it to a neutral position in the region: poised between East and West since the Meiji Restoration, it has balanced between the two and in recent years seen itself as a potential bridge between the two.

Playing that role requires two things: Japan's willingness and the willingness of other countries to let Tokyo mediate between the two. Both are questionable. It is also doubtful whether a country that faces increasingly straitened domestic circumstances will have the inclination or the energy to devote to such diplomacy. Why bother? Japan's postwar aversion to a high-profile international engagement – blame its prewar record – will compound the inclination to stay out of the way. It is also unclear why other countries in the region would acquiesce to Japan playing the role of intermediary: it is more likely that other nations, particularly China, would assume it themselves. Japan has no special status to recommend it as a bridge.

If an activist role isn't likely, another, more passive one, is possible. Worried about its relationship with the U.S., concerned about its status within the region, and eager to maintain the cohesion that has marked Japanese society, Tokyo could strike a tacit bargain with other nations in which it "opts out" of regional affairs. The crudest form of that agreement would call for the end of support for the alliance – both in terms of money and bases – along with a commitment to unarmed neutrality, respect for territorial sovereignty, and a muted diplomatic presence. In those terms, it is an unattractive if not ugly option for today's Japan. When seen through the prism of future economic and military circumstances, it may make sense – if its neighbors respect Japan's "genteel decline."<sup>113</sup>

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<sup>112</sup> Brad Glosserman, "Japan peers into the nuclear abyss," *PacNet* #20, March 20, 2008.

<sup>113</sup> It is hard to see how Japan could accept these terms. But a careful reading of contemporary Japanese history suggests it isn't impossible. See Brad Glosserman, "Japan's Swiss Option," *PacNet* #11, March 15, 2002.

*A middle-power Japan?* Scaling back national ambitions does not mean abandoning them entirely. Japan could accept its reduced status and act as a “middle power.” Soeya Yoshihide is the best-known proponent of this view. According to him, Tokyo’s rejection of military power as a tool of political diplomacy and its avoidance of unilateral action typical of other great powers means that it is already practicing middle power politics.<sup>114</sup> But he urges Tokyo to do more. That means playing a leading role in multilateral cooperative diplomacy and forging stronger ties with South Korea, a nation with which it shares common values. Tokyo’s emphasis on multilateral cooperation should not come at the expense of its alliance with the U.S.; indeed, Japan’s diplomacy would be based on the bilateral security alliance. The question then is whether the U.S. would recognize the value of such a strategy or would it demand yet more from its ally.

This middle-power option makes a great deal of sense. Despite the loss of considerable assets and abilities, Japan will remain relatively strong, at least when compared to many other nations. Japan could devise a national strategy that allows it to use them most effectively. This would also encourage the U.S. to stay more tightly coupled to an ally that plays a more productive international role. This option depends on the nation maintaining – some might suggest the operative word is “developing” – an outward orientation despite intense pressures to focus inward.

### **Implications for the region**

Japan’s demographic transition will have a range of effects on the region, direct and indirect, good and bad. Some have been mentioned: a shrinking economy and dissavings will mean that Japan has less money for aid and investment in other countries. If those efforts have contributed to regional stability, prosperity, and security, then reducing those outlays will have a negative effect. Other countries may be able to make up the difference, but there will be a net decrease in funds and Japan’s influence and status will diminish relative to those of other countries better able to help out.

*Status relative to its neighbors.* As the numbers presented at the beginning of this analysis suggest, Japan’s neighbors face the same demographic problem. Unfortunately, Japan’s situation may be worse. South Korea has done a much better job of opening its door to foreign immigrants, especially in the countryside. More important, in coming decades the prospect of reunification on the Korean Peninsula is increasingly likely, and while that will present economic and social problems of its own, it will also, in one swoop, transform Korea’s demographic trajectory.

China is set to become the first country “that gets old before it gets rich.” Two factors can help stave off that gloomy forecast. The first is a diaspora that can supplement a shrinking population within China’s borders. Promotion of a “Greater Chinese” identity will provide the foundation for such an appeal. A second factor is China’s huge

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<sup>114</sup> Soeya Yoshihide, “New role as a ‘middle power,’” Annual Reports 2001: Comprehensive Research on Stability and Progress in Northeast Asia and New Age of Migration in Asia, at [www.asahi.com/english/aisanet/report/eng\\_2001\\_02.html](http://www.asahi.com/english/aisanet/report/eng_2001_02.html)

population. While the relative size of age groups will change, China will maintain a large population base that will help sustain its economic dynamism.

Also worth noting is the confidence level in Korea and China that poses a stark contrast to the mood in Japan. Despite the difficulties all three countries currently encounter, only Korea and China possess an optimism that they will surmount the economic crisis and emerge stronger than before. The mood in Japan is darker, a reflection of a deeper malaise, the outgrowth of “the lost decade,” a stagnant and paralyzed political system, a sense of social drift and confusion, as well as an ominous sense that Japan’s moment has passed.<sup>115</sup> Demographic trends compound this outlook.

*Less friction.* As noted, Japan’s transformation should result in a less assertive foreign policy and put to rest fears of – or paranoia about – remilitarism. Japan’s relations with both South Korea and China have been troubled throughout the first decade of the 21st century. Japan has provided a ready target for populists and nationalists in both countries. Territorial disputes, economic disputes, competing interpretations of history, and opportunistic politicians have created considerable tensions. But it is hard to see how those efforts could succeed as Japan becomes a less credible threat: is difficult to use a shrinking, aging country that is more self-absorbed and less outward-looking as a bogeyman. Japan’s transformation will make it harder to demonize the country and could help drain tensions in Northeast Asia.

*Greater inclination to regional cooperation.* There are many reasons why regional cooperation should increase as Japan ages. First, and most obviously, the elimination of sources of contention will make it easier to work together with neighbors. The pursuit of common interests is easier when irritants in relationships are removed: aging means the obstacles to cooperation should be reduced. Just as important, a country with diminished resources will be more inclined to reach out to other nations for help in dealing with shared problems. Finally, the countries of Northeast Asia are, for all their differences, quite similar. Japan, South Korea, and China are advanced industrial societies, with many cultural convergences. They confront the same trends and pressures, such as nationalism, aging, and a generational transition. Geographic proximity means that they are equally affected by problems such as sea lane security, environmental degradation, or instability in North Korea. There is every reason for these countries to work together to solve future challenges.

There is already a desire to do so. As noted, Japanese industrial strategists have concluded that deeper integration with neighbors is the most compelling solution to Japan’s lagging dynamism. That process has already begun. China became Japan’s top trade partner in 2007. That year, China was the leading source of Japanese imports, accounting for 20.6 percent of Japan’s total imports. It was the second largest export market (next to the United States) accounting for 15.3 percent of Japanese exports. Exports to China were one of the most important factors behind Japan’s economic recovery of this decade (before the global crisis hit). Chinese figures show that from 1979

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<sup>115</sup> See “Confidence and Confusion: National Identity and Security Alliances in Northeast Asia,” by Brad Glosserman and Scott Snyder, *Pacific Forum CSIS, Issues & Insights*, Vol. 8, No. 16, September 2008.

to 2007, Japan is the second largest source of non-overseas Chinese FDI, with cumulative foreign direct investments of \$61.2 billion.<sup>116</sup>

Both countries recognize that their fates are increasingly intertwined. The tensions that marked Japan-China relations during the Koizumi years have diminished. The desire to move the relationship in a new direction was evident during the April 2007 visit of Chinese Premier Wen Jiabao to Japan. He “melted the ice” during that trip with speeches to the Diet and a common touch elsewhere during his travels. Japanese and Chinese recognize that they need a positive, cooperative relationship. Pointing to new security threats, changes in the global balance of power (a decline in U.S. relative influence), and an expectation that the two countries would do more to contribute to regional and global peace and prosperity, an authoritative Japanese think tank concluded that a strengthened bilateral relationship is an “imperative.”<sup>117</sup>

This relationship will form the core of efforts to forge an East Asian Community, one that will give the region greater weight in global political and economic affairs. This process is taking shape in the ASEAN Plus Three setting.<sup>118</sup> Equally compelling is progress in “plus Three” coordination. Originally, Japan, China, and South Korea huddled on the sidelines of ASEAN get-togethers. Recently, they have taken the initiative. In the aftermath of the economic crisis – and the confusion in ASEAN – the three have met on their own to coordinate economic policy. The question now is whether their watershed summit in Fukuoka, Japan in December 2008 signals a qualitative shift in their relationship with ASEAN and their desire to take on a more assertive role. If it isn’t, then it is only a matter of time.

In isolation, East Asian integration should not be seen as a problem, threat, or challenge to U.S. relations with Asia or Japan. Indeed, the process should be encouraged: more effective multilateralism within the region should facilitate problem-solving. But Japan’s increasing orientation toward Asia and deepening involvement in Asian decision making will create new interests and priorities in Tokyo. The combination of a rising China, a shrinking Japan, and a more coherent Asia will alter the dynamics of U.S. engagement with Japan.

### **Implications for the U.S.-Japan alliance**

Since the first Persian Gulf War in 1991,<sup>119</sup> the U.S. has worked with Japan to expand the scope of their military alliance, increasing Japanese roles, responsibilities, and

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<sup>116</sup> All figures from *Sino-Japanese Relations: Issues for U.S. Policy*, Emma Chanlett-Avery et al., CRS Report, Dec. 19 2008, p. 13-18.

<sup>117</sup> “A new chapter in Japan-China relations: towards co-existence and co-development that overcomes history,” Institute of International Policy Studies, Tokyo, April 23, 2008, p. 7.

<sup>118</sup> A number of institutions could provide a “voice” for Asia; fewer could serve as the foundation of an East Asian Community. We believe that the best vehicle is the ASEAN Plus Three process; proving that will require another, equally hefty, analysis.

<sup>119</sup> Efforts to expand Japan’s responsibilities predated the end of the Cold War, but that event, along with the desultory response to Japan’s aid during the Gulf War and the events of the 1990s, catalyzed attempts by both allies, but especially Tokyo, to do more.

missions. The call to “show the flag” or “put boots on the ground” has resulted in Japan bolstering its contribution to UN PKO through passage of the International Peace Cooperation Law in 1992, which was quickly followed by the first SDF dispatch to such operations in Cambodia in 1992-3. Five years later, the two countries revised the Guidelines for Defense Cooperation, which redefined and expanded the alliance’s scope to include “situations in areas surrounding Japan,” an undefined but potentially larger area than had previously been considered.<sup>120</sup> Since then, Tokyo has enacted legislation that would enable Japan to provide logistical support for U.S. forces defending the country in operations around its periphery, has sent Maritime Self-Defense Forces vessels to the Indian Ocean to join the multilateral coalition in Operation Enduring Freedom, and dispatched Ground and Air Self-Defense Forces to help rebuild Iraq. All of this is in the service of Japanese national interest, as well as an ally who has requested that Tokyo show the flag and put boots on the ground.<sup>121</sup>

As the foregoing analysis makes clear, that process will be reversed. There will be no feet to put in those boots, nor hands to hold the flag. Overseas deployments of combat forces, either as a result of loosening legal and constitutional constraints or in the service of peacekeeping operations, are unlikely. The scope of operations of the Self-Defense Forces (and the Coast Guard, as well) is likely to be reduced: “situations in areas surrounding Japan” will be redefined to include less territory than at present. There will be pressure to constrict Japan’s defense perimeter to a much smaller domain.

As budgets tighten, Japan will be harder pressed to provide host nation support for U.S. forces. In the past, Japan has paid about \$4 billion annually, which covers about 75 percent of the costs of the U.S. military presence in Japan. The most recent agreement obliges Japan to about \$1.4 billion annually through 2010, a slight reduction over previous years.<sup>122</sup> Fortunately, the plan to consolidate U.S. forces in Japan and relocate many of them to Guam will cut that bill. It is estimated that Japan will pay a total of \$26 billion as part of that move.<sup>123</sup> Tokyo has agreed to pay \$6.09 billion of the \$10 billion total cost of moving U.S. forces to Guam.<sup>124</sup> Hopefully by the time that the demographic budget squeeze tightens, that bill will have been paid, but even that amount may be a source of contention as both the U.S. and Japan cope with the historic deficits created by their stimulus efforts to fight the global economic crisis.

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<sup>120</sup> U.S.-Japan Security Consultative Committee, Joint Statement on the Completion of the Review of the Guidelines for U.S.-Japan Defense Cooperation, Sept. 23, 1997.

<sup>121</sup> See Christopher Hughes, *Japan’s Reemergence as a ‘Normal’ Military Power*, Adelphi Paper 368-9, 2004, and Ralph Cossa and Brad Glosserman, “U.S.-Japan Defense Cooperation: Has Japan Become the Great Britain of Asia?” *Issues & Insights*, Vol. 3, No. 5, March 2005.

<sup>122</sup> Emma Chanlett-Avery, et al., *Japan-U.S. Relations*, p. 10. The \$2.6 billion difference is not a cut in support; much of the remainder consists of indirect payments. But the total has been shrinking, the product of Japanese budget constraints and because Tokyo argues that its new responsibilities reduce its need to make those payments.

<sup>123</sup> *Ibid.*, p. 8.

<sup>124</sup> Agreement Between the Government of Japan and the Government of the United States of America concerning the implementation of the relocation of III Marine Expeditionary Force Personnel and their Dependents from Okinawa to Guam, Feb. 19, 2009.

While considerable attention has been given to the U.S.'s belt-busting \$787 billion stimulus, less remarked has been the record-breaking \$154 billion (¥15.4 trillion) stimulus plan passed by the Japanese government in April. With financial measures and guarantees, the package totals ¥56.8 trillion. Combined with previous stimulus measures (this is the third), total spending reaches ¥25 trillion. Alone, the third plan is the equivalent of 3 percent of GDP; when the first two are added, stimulus measures total 5 percent of GDP. The U.S. plan is only 2 percent of its GDP.<sup>125</sup> For our purposes, the important number is debt. The OECD puts Japan's national debt at 197 percent of GDP before the latest package is added. By March 2010, Japan's total debt will exceed ¥800 trillion.<sup>126</sup> Those numbers will squeeze Japan's future options, forcing intense scrutiny of all budget priorities; military spending, traditionally unpopular, will be even harder to defend. ODA is another more popular way for Japan to share the burden of promoting regional stability, but it too is likely to feel the budget knife.

There is another way in which Japan supports the alliance, one that is part of a tacit bargain between the two allies: Tokyo recycles its impressive trade surplus by investing in U.S. Treasury bills. Traditionally, this policy has underwritten U.S. consumption of Japanese goods. It helped provide a market of final demand for Japanese products and attempted to minimize trade frictions between the two countries.<sup>127</sup> As Japanese trade patterns have shifted in recent years, the recycling has helped suppress the value of the yen – which has helped Japanese exporters – and provided the U.S. with substantial funds to cover its own budget deficits. Until late in 2008, Japan was the number one holder of U.S. Treasury Bills. China has recently overtaken Japan to claim the number one spot, but as of February 2009, Japan held \$661.9 billion in T-Bills, putting it just behind China.<sup>128</sup> An aging Japan will no longer be able to recycle those surpluses. Actually, an aging Japan will not have those surpluses: its trade accounts will fall into deficit and funds that are available, along with previous holdings, will be needed at home. This loss of cheap capital has profound implications for the U.S. financial position over the medium- and long-term as the cost of borrowing to support U.S. profligacy and the tendency to live beyond its means will go up.

Of course, Japan contributes more than just money and manpower to the alliance. The homeport provided a U.S. aircraft carrier and other naval forces and the Kadena Air Force Base are invaluable contributions. Forward bases make Japan “an unsinkable aircraft carrier.” Participation in the ballistic missile defense program effectively extends U.S. warning systems deep into the Asian theater. The alliance with Japan, like other U.S. alliances in the region, puts an Asian face on the U.S. presence, making it seem like less of an outsider and more of an integral part of the region. To some extent, America's Asian allies help legitimate its presence in the region.

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<sup>125</sup> “Japan to spend 15.4 trillion yen in stimulus package,” by Keiko Ujikane and Toru Fujioka, *Bloomberg News*, April 10, 2009.

<sup>126</sup> “Aso's stimulus plan may spur economy at ‘massive’ future cost,” by Keiko Ujikane and Toru Fujioka, *Bloomberg News*, April 11, 2009.

<sup>127</sup> See for example, R. Taggart Murphy. “Asia and the Meltdown of American Finance,” *Japan Focus*, Oct. 24, 2008, [http://www.japanfocus.org/-R\\_Taggart-Murphy/2931](http://www.japanfocus.org/-R_Taggart-Murphy/2931)

<sup>128</sup> Major Foreign Holders of Treasury Securities, Department of the Treasury/Federal Reserve Board, April 15, 2009, at <http://www.treas.gov/tic/mfh.txt>

And while we do not endorse this reasoning, some argue that the alliance with Japan gives the U.S. “a card” to play in regional affairs. They insist that the relationship with Japan provides leverage in regional negotiations. Ironically, this logic works two ways. On the one hand, the U.S. is a “cap in the bottle” and prevents Japan from “destabilizing” the region (presumably by some reassertion of its old militarism). This provides a rationale for asserting during the North Korean nuclear crisis that China should help the U.S. realize its objectives or Japan would be forced to go nuclear in response to Pyongyang’s proliferation. On the other hand, some argue that the U.S. uses Tokyo to check China’s ambitions. For them, the U.S. has encouraged Japan to take on a more assertive foreign policy and more expansive military role to balance China’s rise. This school views Japan as the handmaiden of the U.S. in the region and sees tensions between Japan and China as being in the U.S. interest. They check the rise of a regional hegemon and slow development of an Asian community (which would rest on the Tokyo-Beijing axis).

Without endorsing the “cap in the bottle” logic, we do believe that the U.S.-Japan alliance is a critical stabilizer for the region. Not only does the alliance serve as a force multiplier for the two countries’ assets – in this case,  $1+1 = 3$  – but the tethering of these two nations together provides vital reassurance to Japan about its own security and thus to other countries about Japanese intentions. Numerous studies support the argument that the U.S. alliance has inhibited Japan’s nuclear ambitions.<sup>129</sup> By forestalling Japanese acquisition of nuclear weapons or offensive power projection capabilities, the U.S. commitment to Japan’s defense is a vital regional stabilizer. This is independent of the contributions Japan makes to the alliance.

### **Making the best of the inevitable**

Japan’s circumstances look set for radical change. Yet policy seems set to continue within the bounds of current constraints, even though all evidence suggests this is an unrealistic assumption. To prepare for a different future, we provide the following recommendations.

These recommendations accept the continuation of Japan’s current demographic trajectory. The Japanese public and policy makers are aware of this issue and appear to have decided that they prefer a graying, shrinking Japan to the alternatives. That is their choice to make. They do not, however, appear to have recognized the security and foreign policy implications of those choices – at least, policy does not seem to be preparing the country for that future.

Our suggestions attempt to do two things: strengthen ties to the United States and deepen integration with Asia. Japan’s future depends on strong ties to both sides of the Pacific: isolation isn’t in the country’s, the region’s, or the world’s interest. As we argue above, the prospect of Japan being forced to defend itself by itself is the single most

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<sup>129</sup> See Glosserman, “Japan peers into the Nuclear Abyss,” op cit, and Kurt Campbell, et al, *The Nuclear Tipping Point: Why States Reconsider their Nuclear Choices*, Brookings Institution Press, 2004.

important factor shaping its consideration of the nuclear option. We believe that future must be avoided; few decisions have greater potentially negative consequences.

Our recommendations focus on the medium- and long-term, and aim to minimize the consequences of the deterioration of Japan's power and influence. As its resources diminish, Japan must focus more attention closer to home: regional affairs should take precedence over global outreach.

- Most important, Japan must reach a genuine national consensus on its role in the world, within Asia, and in its alliance with the U.S. This is a longstanding complaint about Japan; the recent political tribulations in Tokyo do not make this task any easier.<sup>130</sup> There are many splits in thinking about Japan's role: elites are divided between more assertive nationalists, Yoshida traditionalists, and "middle power" realists. In the background there is a pacifist tradition that is very prominent among the public. The developments outlined in this paper suggest that Japanese ambitions – such as they are – will need to be scaled back. That does not eliminate the need to develop a strategy that matches national interests with national assets: in fact, the need will become even more pressing as the country's material circumstances radically change. Choices that Tokyo has avoided will become even sharper and more pressing. We believe such a process would conclude that Japan should strive toward becoming a middle power. This appears to best fit the country's diminished national assets and shrinking comprehensive national power. Shrinking capabilities does not mean the country has no capabilities, nor does it mean that Japan should be passive and merely respond to forces working on it. Rather, Japan should be actively engaged in efforts to shape the regional environment in ways that protect its national interests. Such activism will also enhance its worth to the U.S. and help strengthen the bonds between those two allies.
- Japan should embark on a determined and intensified effort to strengthen ties with the United States. We have an enlightened approach to the U.S.-Japan partnership, but it is too much to expect such thinking to be the norm. Too often, alliances are subject to crude assessments of costs and benefits, and these can be miscalculated in times of crisis or stress: populism is a poor incubator for strategy. If Japan will have less to contribute to the alliance in the future, then it needs to begin to "lock in" a partnership now. That means creating constituencies in both countries that see Japan as more than just another ally or the alliance is merely one more tool in the U.S. diplomatic arsenal. Expanding the range of partnership discussions beyond "the usual suspects" is vital. Both governments should actively search for new arenas in which the two countries can cooperate. Young professionals from the two countries should be recruited from a variety of fields to find common ground in their areas of expertise. The network of relations spanning the Pacific Ocean should be thickened.

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<sup>130</sup> See for example, Brad Glosserman, "Japan as a Normal State: Implications for the Region," *The Asia Pacific Roundtable Series*, ISIS Malaysia, 2008.



- Both countries should use the alliance as a foundation for trilateral and multilateral cooperation, not only in military efforts (the usual arena for such activity) but to address a range of issues in Asia. The U.S.-Japan alliance should move beyond bilateralism. There is much the two countries can do together to help other countries. Working together on problems with other governments will diminish concern about the motivations behind the alliance in a post-Cold War world. It will build habits of cooperation among citizens of the two countries and with other countries, incubating the multilateralism that will become an integral part of Asia's future. Japan should begin working on this immediately; the more the region is accustomed to seeing the alliance engaged in problem-solving, the less friction will be generated when "Asian solutions" begin to emerge to deal with these problems. The pressure on Tokyo to choose among its partners will be reduced.
- Tokyo should redouble efforts to conclude a U.S.-Japan free trade agreement (FTA). Japan has argued for this kind of arrangement for some time but Americans have been suspicious of the value of such a deal. Judging from the standards set by earlier Japanese FTAs, those suspicions are justified. If Japanese negotiators go into these talks expecting only to protect Japanese industries, especially agriculture, then they will fail. From most perspectives, that strategy should be re-evaluated. It has not created self-sufficiency in food supplies, nor has it yielded an efficient, vibrant farm sector. It has created an encrusted, gentrified agricultural sector that is being depopulated. It results in the squandering of increasingly limited financial resources on subsidies and has alienated many of Japan's trading partners. It minimizes Japan's international influence by forcing it to the sidelines of most major trade negotiations. Japan's strategy should be to tighten links to the U.S. and balance Japan's growing integration into Asia; negotiators should be focused on medium- and long-term benefits rather than protecting today's political constituencies.
- Simultaneous with promoting stronger ties to the U.S., Tokyo should be pressing for deeper integration within Asia. As Japan's leverage and influence weakens, the country cannot afford to delay the process of institutionalization in Asia. Establishing norms and institutions that bind all nations in rule-driven relationships will safeguard Japanese interests over time. Credible Japanese efforts to build institutions will enhance its soft power.
- Thus far, Asian multilateralism has made the most progress on economic issues. Security multilateralism has lagged, partly as a result of enduring suspicions among nations and partly as a result of concerns about its impact on U.S. alliances in Asia. Japan should accelerate attempts to forge regional cooperation on security issues. Japan's constitutional constraints make this a difficult assignment, but working within its legal framework will legitimate Japanese outreach.
- Reach out to South Korea. The Republic of Korea and Japan could and should have a vibrant and forward-looking partnership. The two countries have similar

societies, values, and interests, will face the same foreign and domestic challenges, share a geopolitical and strategic outlook, and are neighbors. Both countries could maximize their international position by working in tandem. They should be partners. To remake this relationship, we suggest that Japan stop giving Korean nationalists a chance to use the country as a scapegoat. As a bold first step, we suggest that Tokyo renounce its claim to Takeshima/Tokdo. Reclaiming the territory is a pipe dream, the claim to it interferes with the improvement of bilateral relations, and making this gesture gives Japan the moral high ground in this relationship as well as recasts the dynamics in all of Japan's other territorial disputes. Eliminating this irritant in the relationship would allow two medium-size powers to work together more effectively on issues of shared concern. It would increase both countries' leverage in their relations with larger powers as well as permit them to work together more effectively to stabilize East Asia.

- Two of the most important issues in Asia's future are energy security and climate change. Many nations see nuclear power as a key element of programs to ensure energy security; nuclear energy is also seen as powerful force to fight against climate change and global warming. There are fears that the spread of nuclear power will raise the risks of nuclear proliferation. This is one example of how Japan can offer a solution to a critical regional concern, and put itself at the heart of regional integration efforts. To stave off the danger of proliferation, it has been suggested that international fuel banks be created to assure supplies of nuclear fuel without providing enrichment technology that is key to the development of nuclear weapons. To that end, Japan should turn the Rokkasho reprocessing facility into an international fuel processing facility. This would make Japan indispensable to Asia's future by providing the energy that would make possible regional development and prosperity. (Given the country's current complete dependence on imported oil and natural gas, the irony of such a policy is rich.)

The U.S. has steps to take as well.

- The U.S. should change the language of engagement with Japan to reflect Japan's new circumstances. We encourage shifts in three ways. First, framing the partnership in terms of quid pro quos will ring increasingly hollow as Japan has less to contribute to the alliance. Instead, alliance discussions should focus on how contributions serve broader regional or global public interests. So, for example, if (or when) a free trade agreement is on the agenda (in whatever form it takes) the key question will be whether such a deal sets better international standards for trade agreements, rather than the mere benefits that accrue to each nation. Crude (or even sophisticated) calculations of benefits are certain to be unequal given the relative positions of the two economies. Some will no doubt choke on this premise, believing that it will encourage Japan to "free ride" on the U.S.; we disagree. This will require changes in Tokyo as well as the U.S. If Japan has less it can contribute to the alliance, then it has to come up with more creative ways it can contribute. This may actually raise the bar for Japan. Which brings us to our second shift: Alliance discussions should focus on nonmilitary

contributions by Japan. The demand for boots on the ground has forced the U.S. into the maw of an intense Japanese domestic political debate about the military, the constitution, and Japan's international role. That debate is proper, but the U.S. should have no role in it. By insisting as it does on military contributions, the alliance is politicized in unhealthy ways. Japan can provide substantial contributions to the partnership with the U.S. and help create a safe, stable, and more prosperous Asia, but those contributions are not military in nature: rather, Japan can provide experienced individuals, knowhow for both economic development and technical capacity building, as well as set standards for responsible international citizenship.<sup>131</sup> An aging Japan is unlikely to be a soft power superpower, but that is likely to be the main pillar of its international status. Third, and finally, the focus of a graying Japan is likely to be more regional than global. We should expect less ambition from Tokyo and a desire to focus increasingly limited resources on areas of more immediate concern: Asia will be privileged over other parts of the world. The two countries should accept that.

- The U.S. must get its economic house in order. Japan is only the first of the Asian societies that will encounter this demographic transition. As others make this shift, domestic consumption patterns will change. Bluntly put, the U.S. will lose its access to the cheap capital that allowed it to live beyond its means for decades. As China ages (and becomes richer), it will discover that the hundreds of billions of dollars that it has loaned to the U.S. (like Japan in the past, to finance U.S. consumption of its own goods) will be better spent at home.<sup>132</sup> This is not to say that countries will engage in economic warfare, using T-bills as weapons. Rather, quite naturally, these governments will decide that they need those funds. The U.S. will face a rise in the cost of capital and its own economic horizons will have to be adjusted accordingly. The U.S. must start preparing now for that tectonic shift in the financial landscape.
- The U.S. should encourage the development of regional security mechanisms to compensate for weakening U.S. alliances in Northeast Asia. As mentioned, Korea too is likely to experience the same demographic trends as Japan. If it doesn't, it will be because of reunification, which will impose an entirely new and equally burdensome set of financial constraints on South Korea. Before the Northeast Asian "spokes" weaken, the U.S. should push to develop regional security mechanisms to pick up the slack. These multilateral institutions should be formal and inclusive. While coalitions of the willing are the flavor of the month, institutions can be more efficient. Their scope and range is established in advance,

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<sup>131</sup> See for example Brad Glosserman and Katsu Furukawa, "A New U.S.-Japan Agenda," Pacific Forum CSIS, *Issues and Insights*, Vol. 8-No. 4, March 2008.

<sup>132</sup> China is number one on the list of U.S. Treasury Bill holders with \$744.2 billion, Japan is number two with \$661.9 billion, and Korea is 18th with \$33.3 billion. Number three is "Caribbean banking centers" (\$189.1 billion), which is likely to include substantial Chinese funds routed through the Caribbean. Hong Kong is number nine with \$76.3 billion; Taiwan is ranked 10<sup>th</sup> (\$72.6 billion); with reunification of China and Taiwan a distinct possibility over the next several decades, it should be included here. Thus, of a total of \$3.162 trillion of Treasury Securities held by foreign entities, a little more than 50 percent could be lost.

and membership and rules don't have to be constantly negotiated. With the leverage and influence of U.S. allies weakening, it makes more sense to formalize structures sooner rather than later. These mechanisms should be as inclusive as possible, to encourage the habits of cooperation that build confidence, build capabilities among less developed nations, and to minimize tensions with nations that might see them as potential adversaries or aimed at them.

- The U.S. should encourage the Asian integration process. We don't believe that the emergence of an Asian community threatens to create blocs or fragment the world economy. Rather, the creation of an Asian Union (or whatever it is called) will stabilize relations in Asia, create shared interests, and help minimize regional tensions. Japan's deep integration into the region will give it a mechanism to exert more influence in Asian affairs, and by virtue of the continued alliance with the U.S., tether the U.S. to the region as well.

### **Shrinking, not vanished**

While Japan's future has not been written, its outlines are apparent. Japan is aging and its population shrinking. The demographic transition that has begun will have profound implications on Japanese society and its international profile. Current trends can be changed, but the longer that action is delayed, the less likely a reversal becomes. The current political turmoil does not bode well for a change of course.

This future poses fundamental questions for the U.S.-Japan alliance. What kind of partner will an aging, shrinking Japan be? Equally important is what will the U.S. expect from that partner? Our reading suggests that we have seen the high-water mark of Japan's international presence and assertiveness. In the future, the country will be increasingly inward focused and the U.S. should adjust its expectations accordingly.

That does not mean giving up on the alliance. Especially as Japan navigates a difficult political and social transition, a sense of security and confidence in the U.S. commitment to its defense are vital. The alliance is a regional stabilizer that pays big dividends. Moreover, an enduring U.S. commitment to Japan's defense even in the face of these trends – in particular, Japan's diminishing capacity to contribute to the alliance – will demonstrate the sort of leadership that will enhance U.S. standing in the region. An enduring alliance between our two nations that rests on a shared sense of purpose, of values and identity, and eschews a crude assessment of costs and benefits sets an example for relations among nations.<sup>133</sup> This is precisely the provision of public goods that exemplifies real leadership. It will be needed more than ever as Japan grapples with wrenching change in the years ahead.

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<sup>133</sup> This position is ironic given our suspicion of calls to use “values” as the glue for security cooperation in Asia. Today, such language is often a cover for ways to exclude China. In the future, with Japan's reduced capacity to contribute to regional security cooperation, talk of values as glue will be honest, not rhetorical legerdemain.

## About the Authors

**Tomoko Tsunoda** was a Vasey Fellow at Pacific Forum CSIS from July 2008 to January 2009. Prior to that, she worked as an intern at the Center for Strategic and International Studies (CSIS) in Washington D.C. Tomoko received her Bachelor of Law from Nihon University in 2006 and obtained her Master's degree from Boston University in 2008.

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## Appendix A

Population (Thousands) Constant-fertility variant from 1950 to 2050

	Japan	China	India	ROK	Italy	Spain	Germany	USA
1950	83 625	554 760	371 857	18 859	47 104	28 009	68 376	157 813
1955	89 815	609 005	405 529	21 422	48 633	29 199	70 326	171 074
1960	94 096	657 492	445 981	25 003	50 200	30 455	72 815	186 158
1965	98 881	729 191	493 868	28 530	52 112	32 056	75 964	199 386
1970	104 331	830 675	549 312	31 922	53 822	33 779	78 169	210 111
1975	111 524	927 808	613 767	35 281	55 441	35 688	78 674	220 165
1980	116 807	998 877	688 575	38 124	56 434	37 527	78 289	230 917
1985	120 837	1 066 906	771 121	40 806	56 593	38 420	77 685	243 063
1990	123 537	1 149 069	860 195	42 869	56 719	38 851	79 433	256 098
1995	125 472	1 213 732	954 282	45 008	57 301	39 388	81 661	270 245
2000	127 034	1 269 962	1 046 235	46 780	57 692	40 229	82 309	284 857
2005	127 897	1 312 979	1 134 403	47 870	58 646	43 397	82 652	299 846
2010	127 824	1 349 364	1 233 922	48 735	58 843	44 896	82 317	314 533
2015	126 693	1 383 236	1 344 018	49 236	58 589	45 456	81 670	329 100
2020	124 494	1 409 825	1 461 501	49 355	57 944	45 550	80 751	343 670
2025	121 397	1 424 334	1 583 243	49 108	57 108	45 359	79 528	357 838
2030	117 684	1 425 688	1 710 628	48 399	56 152	44 995	78 015	371 253
2035	113 522	1 416 201	1 847 264	47 213	55 065	44 514	76 246	383 823
2040	109 007	1 398 168	1 994 529	45 625	53 802	43 877	74 255	395 707
2045	104 242	1 371 719	2 151 408	43 703	52 328	43 000	72 077	407 191
2050	99 349	1 336 436	2 317 324	41 506	50 656	41 841	69 736	418 632

Source: World Population Prospects: the 2006 revision population database, The United Nations Population Division, <http://esa.un.org/unpp/p2k0data.asp>





## Appendix B

Illustrative GDP Projection Scenarios, 2005 to 2050 (See Appendix)

Source: Jackson, R. and Howe, N., *The Graying of the Great Powers: Demography and Geopolitics in the 21st Century*, The Center for Strategic and International Studies, May 2008.

**Figure 2-7: Illustrative GDP Projection Scenarios, 2005–2050**

	Average Annual Growth Rate in Real GDP					GDP Index (2005=100)	
	2005-10	2010-20	2020-30	2030-40	2040-50	2030	2050
<b>United States</b>							
Baseline Scenario	2.5%	2.1%	2.0%	2.1%	2.0%	169	254
Higher Retirement Age	2.7%	2.3%	2.2%	2.1%	2.1%	180	270
Higher Female LFP	2.7%	2.4%	2.2%	2.1%	2.0%	180	271
Lower Productivity	2.0%	1.6%	1.5%	1.6%	1.5%	149	203
Historical Employment Growth Scenario	3.2%	3.2%	3.2%	3.2%	3.2%	220	353
<b>Other English-Speaking Countries</b>							
Baseline Scenario	2.4%	1.9%	1.6%	1.6%	1.5%	160	218
Higher Retirement Age	2.5%	2.1%	1.9%	1.6%	1.6%	171	232
Higher Female LFP	2.4%	2.1%	1.8%	1.6%	1.5%	165	224
Lower Productivity	1.9%	1.4%	1.1%	1.1%	1.0%	141	174
Historical Employment Growth Scenario	2.6%	2.6%	2.6%	2.6%	2.6%	189	277
<b>Japan</b>							
Baseline Scenario	1.3%	1.1%	1.0%	0.4%	0.2%	131	140
Higher Retirement Age	1.4%	1.3%	1.1%	0.5%	0.2%	138	145
Higher Female LFP	1.7%	1.5%	1.4%	0.3%	0.2%	145	153
Lower Productivity	0.8%	0.6%	0.5%	-0.1%	-0.3%	116	112
Historical Employment Growth Scenario	2.3%	2.3%	2.3%	2.3%	2.3%	177	250
<b>Western Europe</b>							
Baseline Scenario	1.9%	1.4%	0.9%	0.9%	1.0%	138	166
Higher Retirement Age	2.1%	1.6%	1.3%	0.9%	1.1%	151	180
Higher Female LFP	1.9%	1.5%	1.2%	0.9%	1.0%	143	172
Lower Productivity	1.4%	0.9%	0.4%	0.4%	0.5%	122	133
Historical Employment Growth Scenario	2.0%	2.0%	2.0%	2.0%	2.0%	165	224

Source: Authors' projections. See "Developed-Country GDP Scenarios" in appendix 1, section 5.



## Appendix C

Transition of budget for defense-related expense, percent in GDP, percent in total budget, percent in total consumption

[http://www.clearing.mod.go.jp/hakusho\\_data/2007/2007/html/js222000.html](http://www.clearing.mod.go.jp/hakusho_data/2007/2007/html/js222000.html)

(Year)	GNP - GDP (A)	(B)	(C)	(D)	(E)		(F)	(G)	(H)	(I)
30 (55)	75,590	9,915	Δ 0.8	8,107	Δ 2.8	1,349	Δ 3.3	1.78	13.61	16.6
40 (65)	281,600	36,581	12.4	29,198	12.8	3,014	9.6	1.07	8.24	10.3
50 (75)	1,585,000	212,888	24.5	158,408	23.2	13,273	21.4	0.84	6.23	8.4
60 (85)	3,146,000	524,996	3.7	325,854	Δ 0.0	31,371	6.9	0.997	5.98	9.6
7 (95)	4,928,000	709,871	Δ 2.9	421,417	3.1	47,236	0.86	0.959	6.65	11.2
8 (96)	4,960,000	751,049	5.8	431,409	2.4	48,455	2.58	0.977	6.45	11.2
9 (97)	5,158,000	773,900	3.0	438,067	1.5	49,414	1.98	0.958	6.39	11.3
						49,475	2.1	0.959	6.39	11.3
10 (98)	5,197,000	776,692	0.4	445,362	1.7	49,290	Δ 0.3	0.948	6.35	11.1
						49,397	Δ 0.2	0.950	6.36	11.1
11 (99)	4,963,000	818,601	5.4	468,878	5.3	49,201	Δ 0.2	0.991	6.01	10.5
						49,322	Δ 0.2	0.994	6.03	10.5
12(00)	4,989,000	849,871	3.8	480,914	2.6	49,218	0.0	0.987	5.79	10.2
						49,358	0.1	0.989	5.81	10.3
13(01)	5,186,000	826,524	Δ 2.7	486,589	1.2	49,388	0.3	0.952	5.98	10.1
						49,553	0.4	0.956	6.00	10.2
14 (02)	4,962,000	812,300	Δ 1.7	475,472	Δ 2.3	49,395	0.0	0.995	6.08	10.4
						49,560	0.0	0.999	6.10	10.4
15 (03)	4,986,000	817,891	0.7	475,922	0.1	49,265	Δ 0.3	0.988	6.02	10.4
						49,530	Δ 0.1	0.993	6.06	10.4
16 (04)	5,006,000	821,109	0.4	476,320	0.1	48,764	Δ 1.0	0.974	5.94	10.2
						49,030	Δ 1.0	0.979	5.97	10.3
17 (05)	5,115,000	821,829	0.1	472,829	Δ 0.7	48,301	Δ 1.0	0.944	5.88	10.2
						48,564	Δ 1.0	0.949	5.91	10.3
18 (06)	5,139,000	796,860	Δ 3.0	463,660	Δ 1.9	47,906	Δ 0.8	0.932	6.01	10.3
						48,139	Δ 0.9	0.937	6.04	10.4
19 (07)	5,219,000	829,088	4.0	469,784	1.3	47,818	Δ 0.2	0.916	5.77	10.2
						48,016	Δ 0.3	0.916	5.79	10.2

(A) GNP-GDP

(B) General account spending

(C) Growth from previous year

(D) General spending

(E) Growth from previous year

(F) Defense related expenditures

(G) Defense expenditures; GNP-GDP

(H) Defense related expenditures to general account spending

(I) Defense related expenditures to general spending



## Appendix D

Transition of defense-related expense from 1998 to 2008. (in billion Yen)

Source: [http://www.mod.go.jp/j/library/archives/yosan/2008/yosan\\_gaiyou.pdf](http://www.mod.go.jp/j/library/archives/yosan/2008/yosan_gaiyou.pdf)

