

---

PART 1: THE  
CHANGING  
ENVIRONMENT OF  
NEW MISSIONS

---



---

# AT THE DEMOGRAPHIC CROSSROADS: INTERNATIONAL SECURITY STRATEGY FOR THE 21<sup>ST</sup> CENTURY

---

CHRISTIAN LEUPRECHT

*Much of the recent literature that takes a strategic view of demography paints a rather dismal picture of the future: over-aging, immigration, rising dependency ratios, along with the ability to service entitlement programs and public debt, are posited as harbingers of decline. Yet this article contends that the future is not actually all that bleak. The future security environment, and the West's ability to act on it, is a matter of understanding the strategic realm for action now to maximize leverage in the future. Demographic trends provide a good indication of both the location and type of conflict for which to prepare. A scan of the demographic horizon suggests that there will be more heavy lifting to do in international security with fewer countries and resources to do the lifting. Rather than painting the devil on the wall, demographic projections reduce the uncertainty with respect to the future security environment, thus helping us grasp how best to position ourselves strategically today so as to continue to asset our interests in the future.*

---

To be successful, Grand Strategy requires objectives, concepts, and resources to be balanced appropriately with a view to defeating one's enemy. Trouble is, of course, that generals are always well prepared to fight the last war. That is because, in the words of Yogi Berra, predictions are always difficult, especially when they involve the future. Yet, grand

strategy is all about the future. But how is one to strategize about a future that is inherently difficult to predict? One way out of this conundrum is to rely on independent variables that can be projected into the future with reasonable accuracy. Aside from environmental indicators, the most consistent of those is demography, specifically demographic change and difference. It turns out that the demographic approach leads to strategic conclusions about the integration of military, political, and economic means in pursuit of states' ultimate objectives in the international system that offer an alternative to what is currently on offer. The importance of this alternative is not to be underestimated: As this chapter shows, owing to unprecedented demographic developments, any margin of error with respect to grand strategy is quickly disappearing.

Waxing and waning neo-Malthusian "end-of-the-world-as-we-know-it" gestations notwithstanding (e.g., Ehrlich 1968), demography had long been relegated to the epiphenomenal margins of grand strategy. However, starting with Paul Kennedy's *Preparing for the Twenty-First Century* (1994), a wave of recent hawkish neo-conservative mongering about the perils of over-aging (Weigel 2005; Jackson and Howe 2008) and immigration (Huntington 2004; Ferguson 2004; Steyn 2006) culminating in the US National Intelligence Council's *Global Trends 2025* (2008), fertility, mortality, and migration have been maturing in grand strategy as independent variables in their own right. Still, much of that literature feels a lot like neo-Nebuchadnezzarian harbingers of the devil's writing on the wall. Yet, the purpose of grand strategy is not to posit demography as destiny. The future is not necessarily all that bleak. Provided that the strategic implications of demography are both understood and acted upon, we can fashion our world in accordance with demographic change instead of having demographic change fashion our world for us.

The world is at a demographic crossroads. Throughout all of history, high birth rates had ensured predominantly young populations with few older people. War and epidemics, such as the plague, would intervene to depress population growth (Anderson 1996; Livi-Bacci 2007). By contrast, depressed population growth today is a function of a historically unprecedented decline in birth rates (Easterlin and Crimmins 1985). That is, women are consistently having fewer or no children than at any previous time in history (for reasons that are beyond the scope of this chapter). Demographically, the world is entering virgin territory. On the one hand, demographic trends suggest that there will be more "heavy lifting" to do with respect to international security. On the other hand, some countries are far better positioned to weather the impending demographic storm than others. Ergo, fewer countries will end up having to do more of the heavy lifting on security, and with fewer resources.

The bad news is that demand for armed forces will grow as demographic determinants of domestic instability rise over the next 20 years. The good news is (1) that the demographic determinants of international

war are on the decline and (2) that demographic projection allows us to pinpoint the likely hotspots. In other words, analysis of the demographic evidence in this chapter suggests that armed forces should prepare for international interventions rather than international war. If the dictum that the generals are always well prepared to fight the last war holds, then prevailing military strategy runs a real danger of having armed forces bet on the wrong horse. Owing to two competing trends, they will find it increasingly difficult to cope with growing demand for their services. Maintaining the armed forces' functional imperative in a tightening labour market means substituting capital for labour. Increased strain on demographic and fiscal resources means smaller but more capable, effective, and professional armed forces. But with soldiers' median age on the rise, and defence spending atrophying under competing political priorities in democratic countries with aging populations, the inclination will be to shift armed forces' dwindling fiscal resources from capital to labour. Due to nuanced demographic trends and political structures, the crowding out will be more rapid and severe in some countries than in others. The downside of this trend is that fewer countries will need to bring a greater proportion of armed and fiscal resources to bear on a less secure world. The upside, however, is that demographic trends are also opening up opportunities to look for new friends as partners in international security. These developments place a premium on soft power (cf. Nye 2004), which include being intentionally strategic about international security regimes and institutions, and international collaboration among armed forces of traditional allies and demographically emerging powers.

The first section of the chapter examines the impact of population growth and decline (of 50 percent in the developing world from 5.3 billion in 2005 to over 8 billion by 2050) as well as migration on international war and domestic demographic instability. Four substantive implications follow: First, demographic developments suggest that the high-tech fantasy of the "big war" with countries such as China and Russia that the hawks are fretting about is a strategic folly whose pursuit ties increasingly scarce demographic and financial resources to a wrong-headed vision. Second, time is on "our" side: Maturing population structures will make some "rogue states," such as Iran, North Korea, and Venezuela, more politically stable. Third, youth bulges will emerge as a growing driver of political instability in select African, Middle Eastern, and Asian countries. Fourth, demographic convergence is providing a welcome opportunity to make new friends in the pursuit of global stability, especially in the Americas. Some of these claims have been advanced elsewhere. But the analytical implications for the strategic pursuit of soft power and new friends relative to the demographic context of political instability is novel.

The second new contribution of this chapter is to analyze shifts in overall global economic activity as well as the relative position of public finances in developed countries to make the case that the relationship

between population growth/decline and public finances is becoming increasingly consequential in terms of countries' capacity to bring scarce demographic and financial resources to bear on international security. Rapid population expansion in the developing world compounded by rapid gains in per capita income translates into the bulk of economic growth shifting to developing countries. As the world's global GDP (estimated using PPP-adjusted gross national income/capita in current US dollars) produced by developed countries (with the richest billion people on the planet) grows by only one-fifth between 2005 and 2050, its share is effectively cut in half, from 60 percent to about 23 percent—less than it was as late as 1820! The emerging reality is that fewer countries will be doing more but with fewer resources. The conclusion expounds these findings and draws inferences concerning strategies to mitigate their impact.

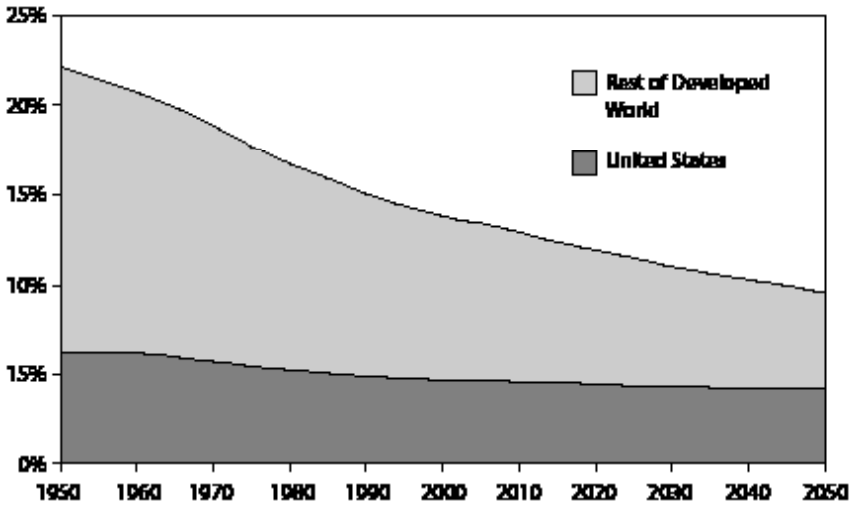
#### DEMOGRAPHIC CONSTRAINTS ON INTERNATIONAL ARMED CONFLICT

Rarely can analysts of politics claim to be documenting new phenomena. Population aging, however, is one of these revolutionary variables. Never before has humanity witnessed such dramatic, widespread aging among the world's most industrialized and powerful democracies. Two long-term demographic trends coincided to produce population aging: decreasing fertility rates and increasing life expectancy. Fertility rates refer to the average number of children born per woman in a given country. For a state to sustain its population (assuming zero net immigration), fertility levels must exceed about 2.1 children per woman.

Today the United States is the sole liberal democracy that comes close to meeting this requirement. Most are well below this average and have been for decades. As Figure 1 shows, the proportion of the world's population that resides in advanced industrialized democracies will continue to decline: from 24 percent in 1980, to 18 percent today, and 16 percent by 2025. This is a remarkable reversal: Between 1700 and 1900, Europe's population and its overseas offshoots had doubled its proportion of the world's total population from 20 percent to 40 percent (Maddison 2007, 378). As late as 1950, Europe, Japan, and North America together comprised roughly one-third of the world's population, compared to one-fifth today and under one-seventh by 2050. By 2030, that translates into an expected total increase of less than 40 million people by 2030 (primarily concentrated in North America as Europe's overall population starts to shrink) as opposed to 1.5 billion people in the rest of the world.

In absolute terms India's population will grow the most (by 240 million to 1.45 billion people followed by an increase of 100 million in China for a total population of 1.3 billion). Growth will also be strong throughout Africa, Latin America, and the Caribbean. Much of Eastern and Central Europe, Russia, Italy, and Japan, by contrast, will see their populations

**FIGURE 1**  
**Developed World Population as a Percentage of World Total**



Source: United Nations 2008; for demographic scenarios see Jackson and Howe 2008, 190, Figure 5-3. Reproduced with permission from Jackson and Howe 2008.

decline by as much as 10 percent. Bucking the trend are the traditional Anglo-Saxon settler countries, the United States, Canada, Australia, and New Zealand, where population growth is projected to exceed 10 percent. Its current growth rate of 1.4 percent notwithstanding, China's population, by contrast, is projected to start declining by 2025 (when it will officially be overtaken by India as the world's most populous country although many demographers already believe India to be more populous than China). Russia's population, by contrast, is projected to fall from 141 to 130 million by 2025 while its population ages rapidly (Eberstadt 2009). While these developments have but a moderate effect on the pecking order among the world's three most populous countries, Table 1 shows that the impact on "the rise and fall" of other "great powers" (measured by population size) is marked.

By 2025, for instance, the number of women of child-bearing age will be barely half of what it is today. The drag on Russian productivity is expected to be considerable (although it will be offset in the short-term by rising rents from Russia's vast wealth in natural resources). In fact, Vladimir Putin has referred to the precipitous decline of Orthodox Slavs as the country's greatest security threat: "The most acute problem facing Russia today is demography," he told the Kremlin in his 2006 State of the Union Address. This is a function not only large swaths of land that are already under-populated but also of a combination of higher fertility rates

**TABLE 1**  
**Largest Countries Ranked by Population Size, 1950, 2005, and 2050**

<i>Ranking</i>	<i>1950</i>	<i>2005</i>	<i>2050</i>
1	China	China	India
2	India	India	China
3	United States	United States	United States
4	Russian Federation	Indonesia	Indonesia
5	Japan	Brazil	Pakistan
6	Indonesia	Pakistan	Nigeria
7	Germany	Bangladesh	Bangladesh
8	Brazil	Russian Federation	Brazil
9	UK	Nigeria	Ethiopia
10	Italy	Japan	DR Congo
11	Bangladesh	Mexico	Philippines
12	France	Vietnam	Mexico
		(14) Germany	(18) Japan
		(20) France	(26) Germany
		(21) UK	(27) France
		(23) Italy	(32) UK
			(39) Italy

Source: Adapted from Jackson and Howe 2008; future rankings for select developed countries which are projected to fall below 12th place are indicated in parentheses.

and migration by ethnic minorities that are poised to eclipse Orthodox Slavs (Hahn 2007).

Due to steep declines in fertility rates over the past century and substantial increases in longevity, allied countries are aging at unprecedented rates and to an unprecedented extent. The scope of the aging process is remarkable. By 2050, at least 20 percent of the population in allied countries, but also of China and Russia, will be over 65. In Japan it will be as high as one-third of the population. By 2050 China alone will have more than 330 million people over 65. Population aging, as Table 2 shows, is accompanied by a diffusion of absolute population decline. Russia's population is already decreasing by 500,000–700,000 people per year.

These projections are highly unlikely to be wrong. Moreover, the trends are largely irreversible. The reason for this certainty is simple: the elderly of the future are already born. Anyone over the age of 40 in 2050 has already been born! Except for some global natural disaster, disease pandemic, or other worldwide calamity, the number of people in the world who are over 65 will grow exponentially over the coming decades. Even in democracies with comparatively good demographic prospects, the proportion of that cohort is projected to double by 2040. Only major increases in immigration rates or fertility levels will prevent this inevitable rise in the number of elderly from resulting in significant increases in states' median ages (Eberstadt 2001). Either outcome is



**TABLE 2**  
**Countries Projected to Have Declining Populations, by Period of the Onset of Decline, 1981–2045**

<i>Already Declining</i>	<i>Onset of Decline: 2009–2029</i>	<i>Onset of Decline: 2030–2050</i>
Hungary (1981)	Italy (2010)	Azerbaijan (2030)
Bulgaria (1986)	Slovakia (2011)	Denmark (2031)
Estonia (1990)	Bosnia and Herzegovina (2011)	Belgium (2031)
Georgia (1990)	Greece (2014)	Thailand (2033)
Latvia (1990)	Serbia (2014)	North Korea (2035)
Armenia (1991)	Portugal (2016)	Singapore (2035)
Romania (1991)	Cuba (2018)	Netherlands (2037)
Lithuania (1992)	Macedonia (2018)	Switzerland (2040)
Ukraine (1992)	Spain (2019)	UK (2044)
Moldova (1993)	Taiwan (2019)	Puerto Rico (2044)
Belarus (1994)	South Korea (2020)	Kazakhstan (2045)
Russian Federation (1994)	Austria (2024)	
Czech Republic (1995)	Finland (2027)	
Poland (1997)	China (2029)	
Germany (2006)		
Japan (2008)		
Croatia (2008)		
Slovenia (2008)		

Source: Adapted from Jackson and Howe 2008; excludes countries with fewer than 1 million people.

unlikely, however. Immigration to Europe, for instance, would have to be four orders of magnitude higher (at 1 percent which is equivalent to four million migrants annually) than historical levels to forestall population aging.<sup>1</sup> Across Western Europe, for instance, rates of immigration would have to be at least double what they are today (assuming no outmigration, a problem to be discussed below). Yet, electorates seem reticent about current levels of immigration, let alone increasing those rates. States such as Russian and Japan have actually moved to restrict immigration. Far from encouraging more immigration, population aging may actually be a catalyst of rising xenophobic anti-immigrant sentiment. It appears that as states' dominant ethnic groups begin to recede in both political power and numbers, they often grow more hostile towards immigrants (Teitelbaum and Winter 1998). Social aging may thus counteract the implementation of at least one strategy to cancel out the negative effects of population aging: immigration.

In fact, industrialized countries, such as Germany, already register net negative migration. In Europe the net migration rate has been hovering around 0.28 percent whereas in North America, Australia, and New Zealand they register around 0.4 percent. Moreover, by the third generation, the fertility patterns of immigrants (who account for 85 percent of

Europe's total population growth among the EU-25 as opposed to only 40 percent in the United States; cf. European Commission 2004, 25) tend to approximate the national norm (which, of course, is below or at replacement across industrialized democracies). Productivity gains that flow from immigration are largely cancelled out by subsequent family reunions: The education and health costs associated with immigrants, their children, and the eventual family reunion with their parents actually have a negative net fiscal impact in the short term. So, the benefits of immigration for social aging are less obvious than they appear.

Significant increases in fertility are equally unlikely. While American and French exceptionalism of above-replacement fertility rates persist<sup>2</sup> and jurisdictions such as Sweden, Norway, Germany, and Quebec have managed to raise their fertility rates through targeted pro-natalist policies, these fertility spikes appear temporary and difficult to sustain over the long term.<sup>3</sup> Moreover, pro-natalist policies are costly. They actually increase governments' fiscal burden, at least in the short run. The most effective pro-natalist policy is to pay women not to work but the fiscal cost-benefit tradeoffs aside, there are also important productivity tradeoffs in that countries with low fertility are also facing acute shortages of skilled labour. With more women now in post-secondary education than men, and women, on average, faring better in their educational outcomes, investing heavily in their education only to pay them to stay at home does not seem to make a whole lot of sense.

In short, neither immigration nor fertility are likely to cancel out social aging. Population aging thus becomes a virtual inevitability. Ergo, countries will need to learn to live with their demographic trends and strategize accordingly.

## DOMESTIC DEMOGRAPHIC INSTABILITY: MIGRATION AND URBANIZATION

The combination of significant (1) aging, (2) diversification of populations, and (3) a reversal of the urban-rural split (from 30–70 in 1950 to 70–30 by 2050 cf. UN Secretariat 2008) is without historical precedent. Since urban populations are both younger and more diverse than rural ones, one might also add a growing urban-rural divide and territorial differentiation as subsidiary challenges. For the first time in history, more people now live in cities than in the countryside. As urban growth outpaces national population growth by a factor of 1.5, the proportion of urban dwellers across the world is expected to rise to 57 percent by 2025. In the less-developed world, where population growth is greatest, however, three billion more people will be living in cities (in addition to the 2.3 billion urban dwellers in 2005), a 50 percent increase from 42.7 percent in 2005 to 67 percent by 2050. In sub-Saharan Africa, the growth will be three-fold, from 3,000 today to 1 billion by mid-century. While

much attention has been focused on the growth of mega-cities, most of the urban growth is expected to transpire in secondary centres along migratory crossroads. Owing to pressures on education, sanitation, energy supply, transportation, food storage and distribution, let alone interethnic relations, these developments raise the spectre of systemic disorder (Evans 2009; Nichiporuk 2000; Taw and Hoffmann 1994, chap. 2), just as youthful populations, rapid development, and urbanization did during the first half of the nineteenth century when confronted with undemocratic governance. Indeed, a recent intelligence forecast cautioned that “lagging economies, ethnic affiliations, intense religious convictions, and youth bulges will align to create a ‘perfect storm’ for internal conflict” in the near future (NIC 2005, 97).

As mega-cities are likely to continue to receive the bulk of attention, they are likely to become hubs of volatility with the population influx vastly exceeding employment prospects on overtaxed services (Goldstone 2010). In fact, where the annual rate of urban population growth exceeds 4 percent, the probability of civil conflict has been found to be 40 percent; where the rate of growth is between 1 and 4 percent, it is half that at 20 percent, and where it is less than 1 percent it is 19 percent. In other words, disproportionately high rates of urbanization are associated with a disproportionately high probability of civil conflict.

These migratory trends are also likely to cause growing disequilibria among ethnic populations, as the “sons of the soil” have to contend with an influx of other ethnic groups. Prominent examples where population differentials are already a source of conflict include Israel, Lebanon and Nigeria as well as native populations across the Americas and Oceania which register some of the highest fertility (and migratory) rates in the world.

Migration and age structure have several connections, one of which is that the most mobile populations also tend to be youthful. That is, migrants are overwhelmingly between 15 and 35 years old. There are a number of reasons for this, but perhaps most importantly, these age groups stand to reap the greatest long-term payoff from migrating and they have the least to lose from being uprooted. While Europe will continue to attract the bulk of migrants, as some of the aforementioned countries harness the working-population benefits that flow from the demographic transition (i.e., the gradual closing of the gap in excess fertility over mortality) and as others continue to develop, including India and China, they are likely to start seeing immigration as well. As migratory flows within Europe, within Asia but also within Africa, are likely to pick up, flows in North America are likely to abate as Central and South America’s populations age and economic development continues apace.

Countries further along the demographic transition in Latin America and Asia, such as India, China, Brazil, and Mexico, will start to benefit from international migration’s human-capital and technology-transfer

effect as educated and affluent expatriates return to their countries of origin. In China, however, that benefit may be offset as the comparative advantage associated with a large working-age population relative to a small proportion of children and elderly starts to wane around 2015, a problem that is further exacerbated by a growing excess of men over women among China's population (cf. Howe and Jackson 2004). The ratio of working-age adults to elderly is projected to shrink from just under 10 in 2000 to 2.6 by 2050 when China's median age is projected to be just over 45 years of age. That median age will make China one of oldest populations in the world—older than Japan, the country with the oldest population today—and is projected to have a median age of 43 by then.<sup>4</sup> Owing to continued migratory flows and lower levels of development in many of the migrants' native countries, the challenge migration poses for Europe is more immediate than for North America.

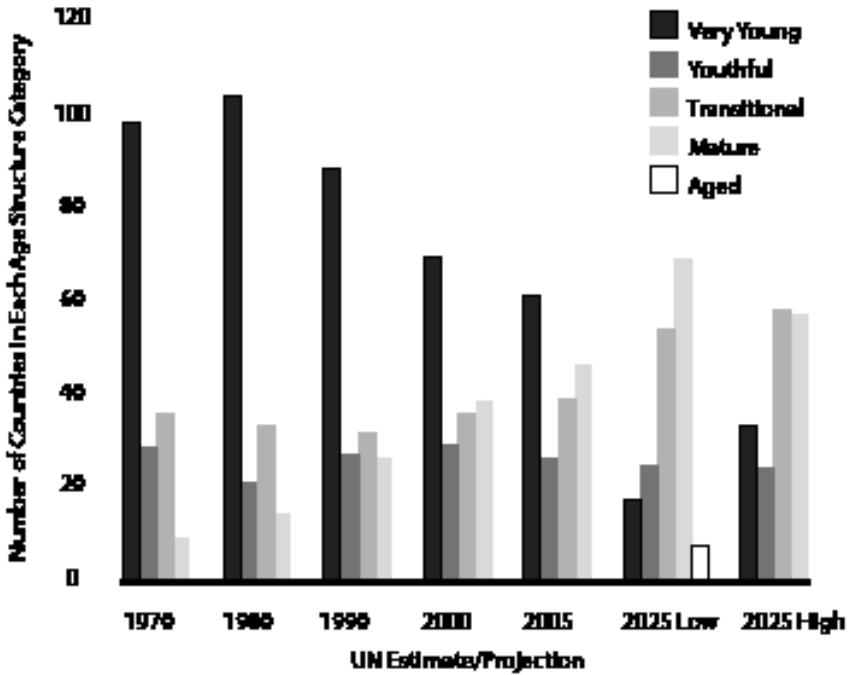
#### DOMESTIC DEMOGRAPHIC INSTABILITY: YOUTH

Global population is expected to grow by 1.2 billion by 2025, an increase of not quite 20 percent from the current 6.8 billion. However, that is well below the rate of increase between 1980 and 2009 when the globe's population grew by 2.4 billion. While the rate of growth may be slowing, the impact of the absolute growth is still staggering. The populations of 50 countries are projected to grow by a third, in some cases by two thirds, by 2025 (which, of course, places additional stress on natural resources, services, and infrastructure). These are predominantly large, Islamic countries of 60 million people or more that are located primarily in sub-Saharan Africa as well as the Middle East and South Asia. With the demographic transition progressing more rapidly in the Middle East and South Asia (Figure 2), the challenges associated with population growth, such as youth bulges, will be greatest in sub-Saharan Africa.

Countries with so-called "youth bulges"<sup>5</sup> (the proportion of the adult population aged 15–29) are depicted in Figure 3; they have been shown to be at a greater risk for civil conflict (Urdal 2006, 2007; Leahy et al. 2007; Kahl 2006; Goldstone 2002; Homer-Dixon 1999) due to strains on systems of schooling and socialization as well as un- or under-employment, concomitant propensity for deviance, and countries in which more than 60 percent of the population is under 30, have been shown to be four times as prone to civil war than countries with mature populations (Leahy et al. 2007).

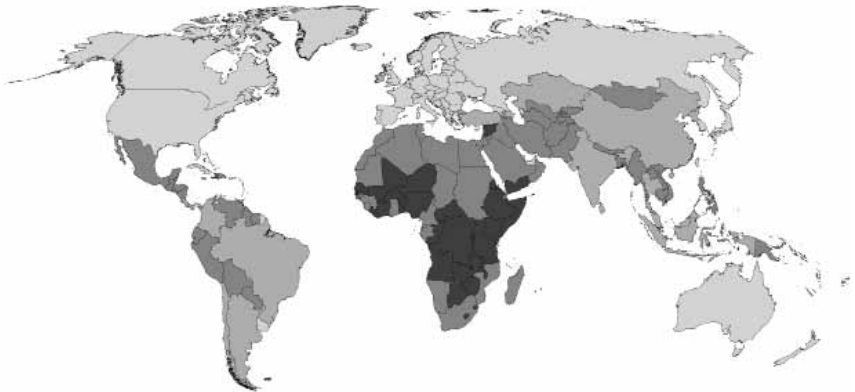
Another way to make the case for the correlation between fecundity, youth bulges, and the propensity for conflict is to examine the association between a country's position along the demographic transition and the outbreak of civil war (as shown in Figure 4): The further along a country's population is in the demographic transition, the lower the probability of civil war.

**FIGURE 2**  
**The Global Population Structure, 1970–2025**



Source: Reproduced with permission from Leahy et al. 2007, 19.

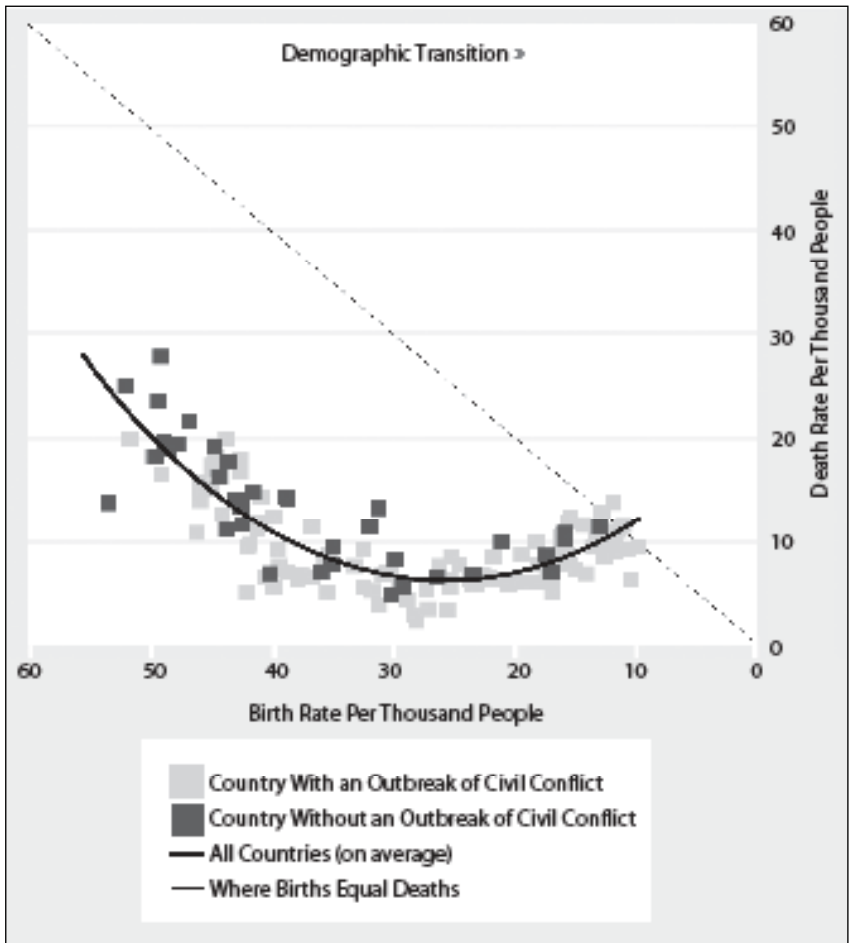
**FIGURE 3**  
**Geographic Distribution of the Youth Bulge, 2005**



Demographic Stress Categories (youth bulge—young adults aged 15–29 years—as a proportion of all adults aged 15 and older): darkest areas are extreme (50 percent); lightest areas are low (less than 30 percent).

Source: Reproduced with permission from Cincotta, Engelman and Anastasion 2003, 43.

**FIGURE 4**  
**Demographic Transition and Outbreak of Civil War**



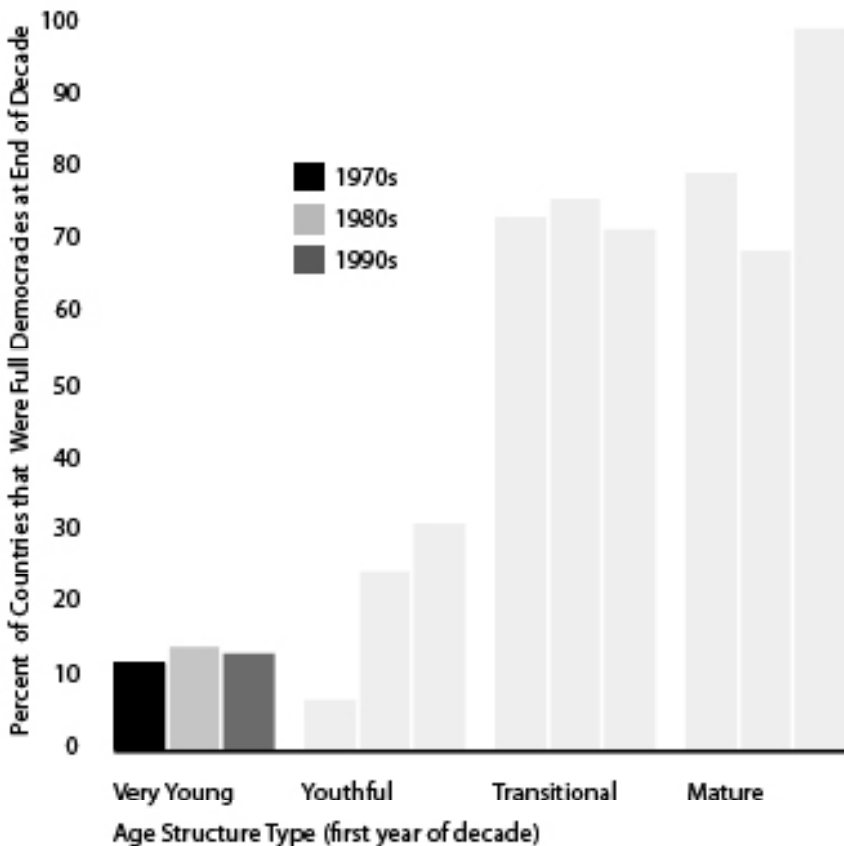
Source: Reproduced with permission from Cincotta, Engelman and Anastasion 2003, 28.

Although youth bulges are on the wane in the Middle East and Southeast Asia, by 2025 three-quarters of the countries with persistent youth bulges will be in sub-Saharan Africa. A key driver of this development is HIV/AIDS which delays the entry of populations with high incidence rates of infection through the demographic transition by compromising the elderly proportion of the population. So, the bulk of conflict and political instability will continue to be scattered across the Middle East, Asia, and some Pacific islands but is likely to be concentrated in sub-Saharan Africa. Since conflict is the single greatest “push factor”

of migration, immigration pressures from sub-Saharan Africa to Europe (but also to places such as South Africa, as Lindy Heinecken's 2001 micro-study on the subject has demonstrated) are expected to continue unabated and may accelerate as climate change makes life even less viable in that part of the world.

However, as youth bulges transition into bulges in the working-age population, some Asian, Latin American, and North African countries have the potential to harness not only the economic returns of the demographic transition (Bloom, Canning and Sevilla 2003) but also "democratic returns" (see Figure 5). They include Turkey, Lebanon, Iran, Morocco, Algeria, Tunisia, Colombia, Costa Rica, Chile, Vietnam, Indonesia, Malaysia, and Thailand. For instance, as Iran's population matures over

**FIGURE 5**  
**Age Structure and Governance**



Source: Reproduced with permission from Leahy et al. 2007, 25.

the coming decade (and approximates China's current age structure with a large working-age population but relatively few children and elderly), prospects for improved education and higher standards of living are likely to become an impetus for political moderation. Since Iran's population structure will be more mature than that of its neighbours, demographically, the risk of it initiating international war is on the wane.

Over the same period, by contrast, populations in the West Bank/Gaza strip, its arch-nemesis Iraq, and neighbouring Saudi Arabia will continue to grow and remain comparatively youthful which means we can expect continued political instability and outmigration among those countries. Still, the youth bulge will be greatest in Afghanistan, Pakistan, the Democratic Republic of Congo, Ethiopia, Nigeria, Guatemala, Iraq, Ethiopia, Angola, Chad and Yemen, producing population growth rates of over 2 percent annually (see Table 3) with populations in those countries doubling every 30–35 years.

**TABLE 3**  
**Fastest Growing Countries 2005–2010 (at least 1 million people)**

<i>Country*</i>	<i>Annual Growth Rate</i> %
Liberia	4.1
<b>Niger</b>	3.9
<b>Afghanistan, Burkina Faso</b>	3.4
<b>Syria</b> , Timor L'este, Uganda	3.3
Benin, <b>Palestine (occupied)</b>	3.2
<b>Eritrea</b>	3.1
<b>Jordan</b>	3.0
Burundi, <b>Tanzania, Yemen</b>	2.9
<b>Chad</b> , Congo (DR), <b>Gambia</b> , Malawi, <b>UAE</b>	2.8
Angola, Rwanda, Madagascar, <b>Sierra Leone</b>	2.7
<b>Ethiopia</b> , Kenya, <b>Senegal</b>	2.6
Guatemala, Togo	2.5
<b>Kuwait, Mali, Mauritania</b> , PNG, Zambia	2.4
Cameroon, Côte d'Ivoire, <b>Guinea</b> , Mozambique, <b>Nigeria, Somalia</b>	2.3
<b>Guinea-Bissau, Iraq, Pakistan, Sudan</b>	2.2
Ghana, <b>Oman, Saudi Arabia</b>	2.1
Honduras, <b>Libya</b>	2.0
Cen.Afr.Rep., Congo, Namibia, Nepal	1.9
Bolivia, <b>Egypt</b> , Gabon, Ireland, Laos, Paraguay, Philippines	1.8
Israel, <b>Malaysia</b> , Venezuela	1.7
Cambodia, Haiti, Panama, <b>Tajikistan</b>	1.6
<b>Algeria</b> , Colombia	1.5

\*Countries with 50 percent or more Muslim population in **Bold**.

Source: United Nations 2008.



Even if fertility rates in Nigeria or Afghanistan were to decline, they are currently so high that, at best, each country might barely transition from a young to a youthful age structure by 2025.

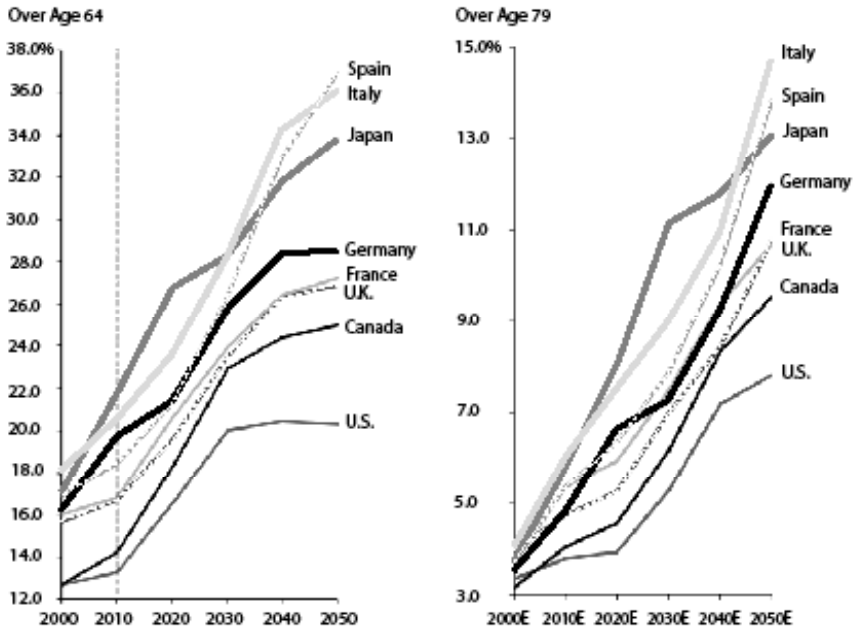
#### FISCAL IMPLICATIONS OF DEMOGRAPHIC CHANGE: KNOWING ON WHICH HORSE TO BET

Global population aging is thought to prolong US power dominance in the twenty-first century (Haas 2010), which, in turn, has significant implications for international security. First, the massive costs created by aging populations, especially in combination with probable slowdowns in economic growth—with a drag of 1 percent on GDP due to slowing employment growth in Europe, for instance—will preclude other major powers from increasing military expenditures to match US defence spending. Rather, demographic factors are likely to curtail military expenditures further. Regardless, demographic developments are bound to crowd out spending on defence. In short, defence spending is unlikely to escalate which should, overall, portend well for international peace. Second, aging populations and shrinking workforces will cause other great powers to spend more of their defence budgets on personnel costs and military pensions at the expense of researching, developing, and purchasing technologically sophisticated weaponry. The more states spend on military personnel and pensions as opposed to weapons, the greater the gap between US (and allied) military capacity and that of possible challengers. As the cost of engaging the US in an international conflict grows, the probability of a major international war engaging the US declines. Third, although the US population is aging, it is doing so to a lesser extent and less quickly than those of possible challengers. As a result, the pressures of elderly care over military spending is favourable, and the increased substitution of labour for capital in defence budgets will be smaller for the United States than among its competitors. The remainder of this sub-section will elaborate why the fiscal implications of demographic change militate against paradigm shifts away from the status quo of international security.

An unprecedented 70 percent of people in the developed world are between 15 and 64 years of age. Yet, as Figure 6 shows, the United States and some other Anglo-Saxon countries are aging less rapidly than other countries, owing largely to higher fertility rates and immigration.

Never before has that proportion been so high—and it is only expected to decline henceforth. This has important implications for consumption, productivity, tax revenue, and fiscal expenditures. Over the next two decades the proportion of seniors to the working age population will climb from fewer than 1 in 4 to 1 in 2 in countries such as Japan. In many countries the aging effect is exacerbated by a contracting working-age cohort although that effect is less pronounced in countries with higher

**FIGURE 6**  
**Elderly Population by Country (as a proportion of the total population)**



Source: US Census Bureau, as cited in Culhane 2001, 7.

immigration and/or effective pro-natalist policies including the UK, France, Belgium, the Netherlands, and Scandinavia. At constant per capita expenditures, by 2040 Germany will have to increase its annual spending on elderly care more than seven-fold relative to its current spending on defence. France would have to spend more than five times as much, and Japan more than 15 times as much (Haas 2007, 120-121).

Given the magnitude of the costs created by the NATO allies' and great powers' aging populations, substantial increases in these states' expenditures for economic development and defence are unlikely. Among NATO allies at least, the massive costs of aging are likely to create so austere a financial climate that there will be little room for politicians to begin substantial new spending in areas not related to the care of seniors. We may already be witnessing this trend. Despite concerns about growing Chinese power and North Korea's missile and nuclear programs, Japan reduced its defence budget every year from 2003 to 2008. The cuts were linked explicitly to mushrooming costs generated by its aging population. The Japanese government is on record as stating that general expenditures will have to be cut 25–30 percent to cope with expenses associated with population aging.

Similar pressure for cuts in defence spending to finance elder-care costs are building in France and Germany. In February 2006, the EU Commission warned Germany that it had to cut discretionary spending across the board “to cope with the costs of an aging population.” Speaking on behalf of the government, Germany’s Minister of Finance, Peer Steinbrück, agreed with this analysis and promised to put the commission’s recommendations into practice. This decision is a continuation of a policy that Germany has followed over the past decade of “letting defence spending languish ... while investing in social welfare instead.” Even in the post-September 11 world, “cutting social programs or raising taxes to buy weapons is considered [in Germany] politically impossible.”

Also in 2006, the French president created the Public Finance Guidance Council, lead by the prime ministers and the ministers of the economy, finance, and industry, whose primary purpose is to reduce France’s national debt. It has grown significantly in recent years in no small measure due to increasing costs for elderly care. The council’s primary policy mandate is to reduce to a substantial degree expenditures “of all public players,” including the military.

Population aging is likely to crowd out military spending—but not just in the democratic world. China, for instance, is projected to become the first country to grow old before becoming an advanced industrial state. Even if its economy were to continue growing rapidly, by 2035 its median age will reach that of France, Germany, and Japan today, but at levels of per capita GDP that are significantly lower, and with massive unfunded pension liabilities of state-owned enterprises (Haas 2007, 124). With its economic and fiscal constraints approaching those of most Western European countries (Eberstadt 2006) but with far greater shortfalls between the government’s obligations to the elderly versus saved assets (England 2005, 87, 89, 91; Longman 2004, 55-56; Jingyuan 2002, 183), China’s ability to invest in defence and security will be crowded out as its leaders, by about 2020, will be faced with a dilemma: tolerate growing levels of poverty among a mushrooming elderly population, or curtail other spending to provide the requisite resources to safeguard internal stability by alleviating these circumstances.

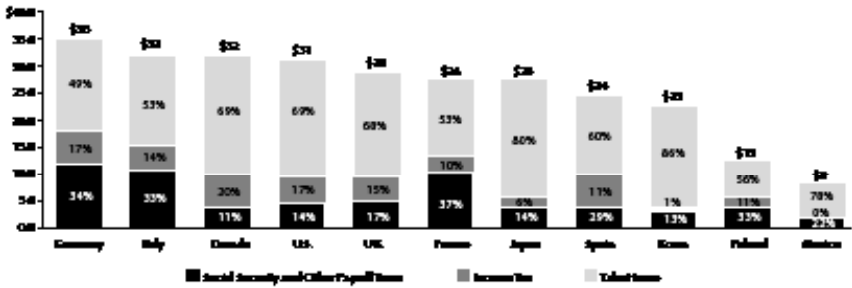
No country will be able to challenge NATO’s and especially the US’s military dominance without the ability to wage highly technologically sophisticated warfare (Posen 2003). Social aging, however, will cause militaries to spend more on personnel and less on capital, such as weapons development and procurement. This trend is already evident in NATO member countries today, especially when escalating pension and health-care liabilities are factored in. Since 1995, both France and Germany have dedicated nearly 60 percent of their military budgets to personnel. Canada spends about half its budget on personnel. Germany spends almost four times more on personnel than on weapons procurement. France, Japan, and Russia spend nearly 2.5 times more. By contrast, the United States

dedicates less than 1.3 times more money to personnel than to weapons purchases (Haas 2007, 140-141).

There are two reasons why population aging causes military-personnel costs to rise. First, as demographic growth slows but economies continue to grow, the labour market tightens. Concomitantly, the nature of modern military organizations—as Morris Janowicz (1960) observed four decades ago—is less and less “an organization set apart” for a uniquely specific purpose (as Huntington in 1957 purported), but is instead increasingly approximating any other private- or public-sector organization. As a result, it competes for the same highly skilled and educated labour. The combination of a tightening labour market and growing competition of a small pool of highly qualified labour causes salaries to grow exponentially.<sup>6</sup> In 2008 the Russian government announced plans to raise military salaries to 25 percent above the average wage by 2020 and to improve housing and pension benefits for military personnel. China, its conscripted force notwithstanding, had to raise officers’ wages by 85 percent and soldiers’ wages by 92 percent between 1992 and 2002. In fact, the Chinese government—which is usually coy and conservative in revealing its defence expenditures—is on record as identifying growing personnel expenses as the greatest driver in the growth of China’s defence budget over those 10 years (People’s Republic of China 2004).

Second, pension liabilities (which are often un- or under-funded) are escalating. Russia, for instance, has been spending more on retired military personnel than on either weapons procurement or military research and development (International Institute for Strategic Studies 2010). Similarly, rising pension costs are the second most important reason for increases in Chinese military spending over the past decade (after the aforementioned pay raises for active personnel; *idem*). Pensions, of course, are a liability in that they are ongoing and growing obligations that add little value to defence capabilities. In countries such as Germany, which pays its pension obligations out of general revenue (i.e., current contributions, instead of being invested to grow, pay for current liabilities—a system commonly known as “pay as you go”), every Euro spent on retirement benefits is one Euro less to spend on other services, let alone weapons, research, or personnel. The United States, the United Kingdom, and Canada, by contrast, use funded pensions to augment social security. Pay-as-you-go systems redistribute revenue from the working-age population to pensioners through taxes. When the benefits paid replace a high proportion of average earnings, they also create a disincentive to save and work past the normal retirement age, both of which depress GDP growth (an issue to which we shall return below). In light of population aging, pay-as-you-go systems are fiscally unsustainable because they have to be paid for either through tax increases by the working-age population or through issuance of government debt (thus crowding out defence spending). Yet, as Figure 7 shows, many pay-as-you-go countries already register some

**FIGURE 7**  
**Gross Earning of Average Production Worker, 1998**  
 (thousands of dollars of equal purchasing power)



Note: Excludes VAT.

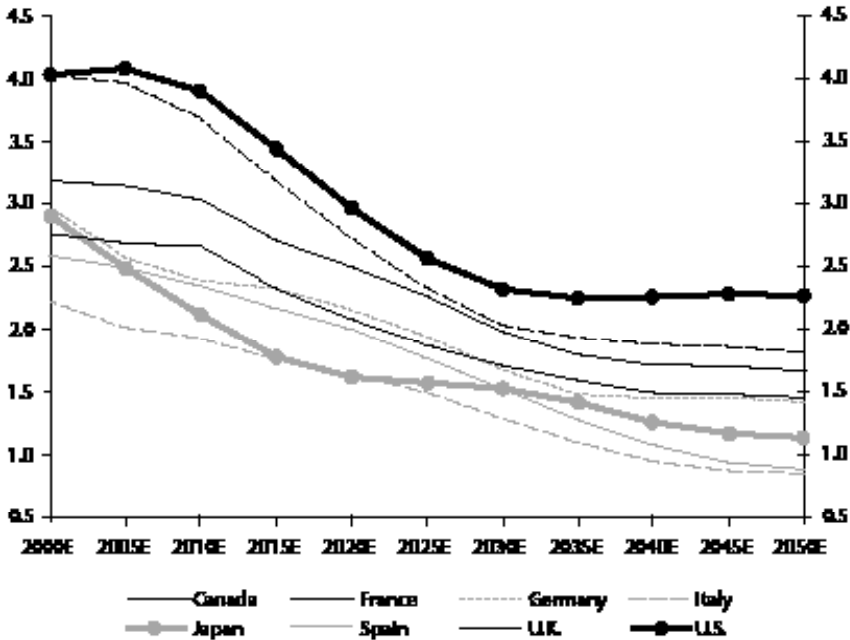
Source: OECD 2000a, as cited in Culhane 2001, 16.

of the highest marginal tax rates in the world. This is problematic insofar as high payroll taxes are a drag on a workforce’s competitiveness. Pay-as-you-go is a vicious circle: As countries raise taxes to pay for pay-as-you-go, their workers become increasingly uncompetitive, thus further undermining the ability to pay for the pay-as-you-go system.

In 1998, the average German worker was four times as expensive (\$35,900) as his Mexican counterpart (\$8,700) with 51 percent of his pay going to taxes, excluding VAT. Social security and payroll taxes made up 34 percent of a German worker’s taxes—but covered only 76 percent of social-security expenditures! As the dependency ratio of the working-age population to elderly in Germany is halved by 2050 (Figure 8), considerable increases in payroll taxes are to be expected.

As Europe, Japan, and South Korea lose one quarter to one-third of their prime labour force by 2050, the dependency gap widens. Notable in Table 4 is stagnating or declining populations of prime working age due to aging outpacing growth even in countries with high rates of immigration, such as France, Spain, and Switzerland. While their labour force faces an unprecedented decline, the proportion of their population over 60 years of age will rise by 50 percent on average. However, in countries whose labour force continues to grow, such as the United States, Canada, and Spain, the proportion of the population over 60 will actually double over the same period, to 16–17 percent in the US and 28–30 percent in Canada, for example. Similar trends, albeit time-delayed, obtain for South Korea, China, and Ireland. As Table 4 details, by 2050, the population over 60 years of age will reach 35 to 40 percent in many of these countries. Europe’s working-age population, for instance, has been on the wane since its apex of 480 million in 2005 and, by 2050, is expected to revert to its 1950s level of 330 million.

**FIGURE 8**  
**Elderly Support Ratio: Actual Workers/Population Aged Over 64**



Source: US Census Bureau, as cited in Culhane 2001, 10.

A growing dependency ratio aggravates the situation further by depressing GDP growth as people work less, exercise their exit option in favour of lower-tax jurisdictions, migrate to the underground economy, opt not to work at all, and, squeezed by high taxes, opt for fewer children. Modest retirement promises and funded public and private pension plans have direct and indirect benign effects on demographic growth by encouraging fecundity and immigration along with stronger economic-growth prospects (Table 5), thus positioning countries that operate in this vein demographically and fiscally more robustly with respect to their international-security capacities.

As populations age and the dependency ratio between the old and the young becomes increasingly strained, pension systems turn out to be integral to the capacity to contribute to international security. Funded pension systems redistribute income through the purchase of assets by workers and the sale of assets by retirees. As they encourage workers to save, they increase capital and thereby productivity and GDP growth. The United States and Canada have fairly well-funded pension systems (especially compared to China, France, Germany, and Russia).<sup>7</sup> The implications for public finances in terms of total government outlays and public

**TABLE 4**  
**Aging and Labour Force Change in Major European and Other Countries, 2009–2050**

	% Change in:		
	Total Population	Population 15–60	Population 60+
Bulgaria	-29	-46	13
Belarus	-24	-42	46
Ukraine	-23	-40	21
Japan	-20	-37	19
Romania	-19	-38	50
Poland	-16	-38	70
Russia	-18	-36	47
Germany	-14	-32	32
Hungary	-11	-26	33
S. Korea	-9	-36	146
Portugal	-6	-26	54
EUROPE	-6	-24	47
Italy	-5	-24	41
Greece	-2	-23	54
Czech Republic	-1	-23	57
Denmark	1	-6	29
Austria	2	-18	59
Finland	2	-10	36
China	5	-17	175
Netherlands	5	-9	53
Belgium	8	-7	52
France	9	-6	56
Switzerland	13	-4	56
Spain	14	-13	93
Sweden	14	4	40
United Kingdom	18	7	51
United States	28	15	97
Canada	32	9	116
Ireland	39	17	164

Source: OECD 2009a.

old-age cash payments are dramatic. As Table 6 shows, at the turn of the millennium government outlays (excluding health-care costs) ranged from almost 50 percent in France to 29 percent in the United States. In 1997, cash benefits ranged from 4.4 percent in Canada to 13.2 percent in Italy.

Owing to low social-security promises, the United States, the United Kingdom, and Canada are less affected by social aging. As borne out in the political culture of those countries, polling data show that Americans have the highest prediction of when they would retire (67.2) and (by far) the lowest expectations regarding governmental support of their retirement.<sup>8</sup> As seen in Figure 9, while Canada and some other countries compare favourably in terms of public health-care expenditures as a proportion of GDP, Germany and France (but also the United States) fare poorly.

**TABLE 5**  
**Fertility and Longevity Expectations**

	<i>Fertility Rate</i>				<i>Life Expectancy at Birth</i>			
	<i>1960</i>	<i>2000E</i>	<i>2020E</i>	<i>2050E</i>	<i>1960</i>	<i>2000E</i>	<i>2020E</i>	<i>2050E</i>
United States	3.31	2.06	2.18	2.22	70.0	77.1	79.9	83.9
Canada	3.61	1.60	1.64	1.70	71.4	79.4	81.7	83.7
Japan	2.02	1.41	1.52	1.70	69.0	80.7	80.7	84.1
United Kingdom	2.81	1.73	1.72	1.70	70.8	77.7	77.7	83.1
Germany	2.49	1.38	1.51	1.70	70.3	77.4	80.4	83.0
France	2.85	1.75	1.73	1.70	71.0	78.8	81.3	83.5
Italy	2.55	1.18	1.25	1.70	69.9	79.0	81.4	83.5
Spain	2.89	1.15	1.31	1.70	70.2	79.6	81.3	83.5
Netherlands	3.13	1.64	1.67	1.70	73.4	78.3	81.0	83.3
Switzerland	2.51	1.47	1.56	1.70	71.7	79.6	80.6	83.7
Denmark	2.59	1.73	1.72	1.70	72.3	76.5	79.8	82.8
Finland	2.58	1.70	1.70	1.70	68.9	77.4	80.4	83.0
Norway	2.90	1.81	1.77	1.70	73.4	78.7	81.2	83.4
Sweden	2.34	1.53	1.60	1.70	73.5	79.6	81.8	83.7
China	5.72	1.82	1.81	1.80	49.5	71.4	76.7	80.9
India	5.81	3.11	2.26	2.02	45.5	62.5	69.4	77.0

Source: US Census Bureau 2010.

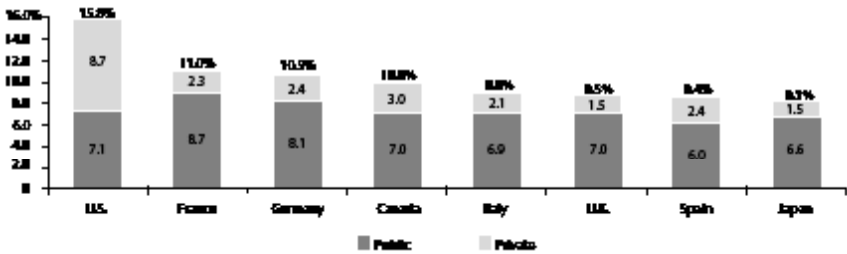
**TABLE 6**  
**Retirement Spending as a Percentage of GDP, 2000–2050**

<i>Country</i>	<i>Total Government Outlays</i>	<i>Cash Public Old Age Benefits</i>	<i>Basic Old Age Pensions (Roseveare)</i>			<i>European Commission November 2000</i>	
	<i>2000E</i> %	<i>(1997)</i> %	<i>2000E</i> %	<i>2010E</i> %	<i>2050E</i> %	<i>2000E</i> %	<i>2050</i> %
Canada	37.8	4.4	5.0	5.3	8.7	NA	NA
France	51.2	10.7	9.8	9.7	14.4	12.1	15.8
Germany	43.0	10.5	11.5	11.8	17.5	10.3	14.6
Italy	46.7	13.2	12.6	13.2	20.3	14.2	13.9
Japan	38.2	5.5	7.5	9.6	16.5	NA	NA
Spain	38.5	8.6	9.8	10.0	19.1	9.4	17.7
UK	38.4	6.4	4.5	5.2	4.1	5.1	3.9
US	29.3	5.6	4.2	4.5	7.0	4.2	6.8

Source: OECD 2000b and 2000c; Roseveare et al. 1996; Commission of the European Communities 2000; as cited in Culhane 2001, 15.



**FIGURE 9**  
**Health-Care Expenditures as a Percentage of GDP (2006)**



Source: OECD 2009b.

What is more, countries which are already facing the greatest expenditure burden for its old population aggravate matters further: As evidenced in Table 7, instead of liberalizing working conditions, they ease their unemployment burden by encouraging early retirement, thus enlarging the pool of unused potentially productive labour. That aggravates social conflicts over issues such as pensions, migration, and labour/employer relations (Friedman 2005) and presents opportunities for countries to invest instead in technology to spur gains in productivity.

**TABLE 7**  
**Labour Capacity**

Country	Unused Labour Capacity 55–65 %	Men Out of the Labour Force, Age 59 %	Early Retirement Age	Replacement Rate at Early Retirement Age %	Implicit Tax on Earnings in Next Year %
France	60	53	60	91	80
Italy	59	53	55	75	81
Netherlands	58	47	60	91	141
United Kingdom	55	38	60	48	75
Germany	48	34	60	62	35
Spain	47	36	60	63	–23
Canada	45	37	60	20	8
United States	37	26	62	41	–1
Sweden	35	26	60	54	28
Japan	22	13	60	54	47

Source: Gruber and Wise 1999, 29.

Although the United States' population, too, is aging, Table 8 documents that due to above-replacement fertility and persistent immigration, America has the youngest population among G8 countries. The combination of fertility and immigration (along with comparatively low welfare-state and state-pension obligations, with most of the latter liabilities funded) will strengthen America's relative demographic position vis-à-vis the other G8 countries. According to 2008 estimates published by the UN, between 2010 and 2050 the United States will remain the largest net receiver of international migrants. Half of those migrating to the developed world choose the United States which results in an annual rate of migration five times greater than that of the second-place country in this category: Canada (1.1 million people vs. 214,000). However, as a proportion of its total population, Canada will continue to have the highest immigration rate in the industrialized democratic world. The compound effect of migration to these two allies means that North America's global leadership role is likely to prevail—and the Canada is likely to become an increasingly important defence partner because of its relatively rosy demographic and, as of late, fiscal outlook.

**TABLE 8**  
**Median Age by Country, 1950–2050**

Country	Year 1950	Year 2000	Year 2050
United States	30.0	35.1	41.7
United Kingdom	34.6	37.7	42.5
Russia	25.0	36.5	44.0
France	34.5	37.7	44.8
China	23.9	29.6	45.2
Germany	35.4	40.0	51.7
Japan	22.3	41.4	55.1

Source: United Nations 2008.

By contrast, Table 9 lists the countries whose median age is expected to be 50 or higher by 2050. European countries figure prominently but with key notable exceptions throughout Western Europe in what neoconservative theologian George Weigel piously fantasizes about as “Europe committing demographic suicide, systematically depopulating itself.” Europe is about to witness “the greatest sustained reduction in population since the Black Death in the fourteenth century” (Ferguson 2004).<sup>9</sup>

China's median age will surpass the United States' by 2025. In China, France, Germany, Japan, and Russia, the working-age population is also projected to decline by 2050 or increase modestly (the UK). Figure 10 contrasts those trends with the United States where the working-age cohort is expected to grow by 23 percent.

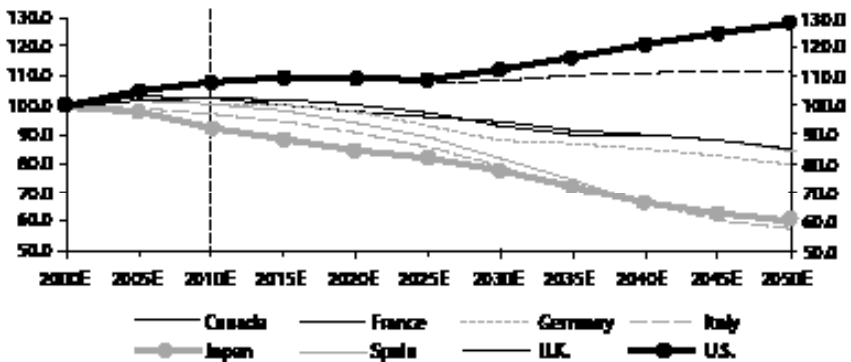
**TABLE 9**  
**Countries Whose Median Age is Projected to be 50 or Over by 2050**

Taiwan	56.3	Hong Kong, SAR	54.0	Armenia	52.3
Japan	56.2	Ukraine	54.0	Croatia	52.1
Bulgaria	55.9	Romania	53.9	Cuba	52.0
South Korea	55.5	Slovakia	53.9	Germany	51.8
Slovenia	55.3	Latvia	53.8	Belarus	51.7
Czech Republic	55.0	Italy	53.5	Hungary	51.2
Poland	54.4	Greece	53.3	Portugal	51.1
Singapore	54.3	Lithuania	52.8	Austria	50.9
Spain	54.2	Bosnia and Herzegovina	52.7	Georgia	50.2

Excludes countries with populations of less than 1 million.

Source: United Nations 2007; and *Population Projections for Taiwan Areas: 2008–2056*, Council for Economic Planning and Development, Taiwan, <http://www.cepd.gov.tw/encontent/m1.aspx?sNo=0001457>. For demographic scenario, see Jackson and Howe 2008, 190.

**FIGURE 10**  
**Working Age Population (aged 20–60) by Country, 2000–2050**  
**(index 2000=100)**



Source: US Census Bureau, as cited in Culhane 2001, 8.

(North) America’s youth demographics will help offset some of the challenges of social aging. Over the coming decades (North) America’s growing labour force will enhance economic growth and innovation thereby providing the government with additional revenue without having to raise taxes, borrow, or cut spending (see Table 10).

As a rule of thumb, countries with slower demographic growth tend to have slower GDP growth. Yet, the differences are significant: Whereas GDP is expected to rise by only 30 percent in Japan, Spain, and Italy as a result of an aging population, it is projected to rise some 300 percent in the United States. That is, demographic differentials (largely owing to higher fertility) account for a difference in economic growth by a magnitude of 10!

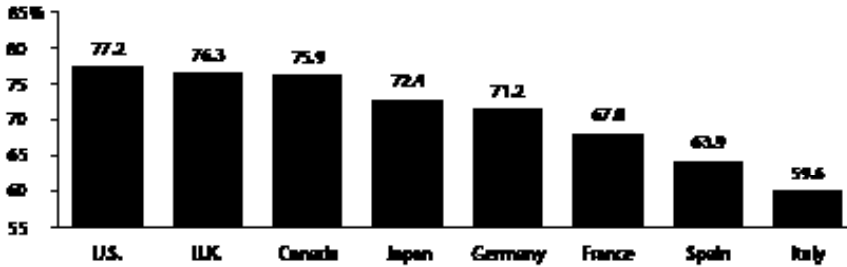
**TABLE 10**  
**Real GDP Annual Compound Growth Rate (labour hours and productivity), 1981–1999.**

	1981–1989	1990–1995	1996–1999
US			
GDP	3.64	2.52	4.84
Labour hours	2.06	1.04	2.30
Labour productivity	1.31	1.02	2.30
Italy			
GDP	2.36	1.59	1.38
Labour hours	0.04	(1.09)	0.71
Labour productivity	2.33	2.72	0.67
Canada			
GDP	3.25	1.51	3.53
Labour hours	1.81	0.17	2.59
Labour productivity	1.42	1.34	0.92
France			
GDP	2.40	1.30	2.53
Labour hours	(0.95)	(0.94)	0.91
Labour productivity	3.41	2.26	1.61
Germany			
GDP	n.a.	1.62	1.72
Labour hours	n.a.	(0.62)	(0.41)
Labour productivity	n.a.	2.26	2.14
Japan			
GDP	4.09	2.15	1.31
Labour hours	0.95	(0.73)	(0.76)
Labour productivity	3.12	2.89	2.07
Spain			
GDP	2.70	1.67	3.69
Labour hours	(1.70)	(0.86)	3.34
Labour productivity	3.89	2.58	0.34
U.K.			
GDP	3.54	2.37	2.78
Labour hours	0.22	0.60	1.29
Labour productivity	3.37	1.78	1.47

Source: Gust and Marquez 2000, 669.

The OECD's 1999 data on labour-force participation in Figure 11 make clear, for persons aged 15–64 (an expanded definition of working age used by most demographers, whereas economists usually look at the population 2060), that there was high employment in the United Kingdom, Canada, and the United States (economists usually consider 77 percent full employment), moderate employment in Japan (due to low female participation rates) and Germany, and low employment in France, Italy and Spain. In other words, North America enjoys not only a comparative demographic advantage but also harnesses that advantage more effectively.

**FIGURE 11**  
**Labour Force Participation Rates, 1999 (ages 15–64)**



Source: OECD 2000a, 216.

Whereas labour-force participation further mitigates the impact of social aging in Anglo-Saxon countries (and has potentially positive implications for recruiting prospects), it exacerbates it in much of continental Europe.

#### INTERNATIONAL SECURITY STRATEGY IN THE AGE OF POPULATION AGING

Some countries are better positioned vis-à-vis demographic change than others and some will even have security benefits accrue to them, especially as a result of the continental multiplier effect in North America that is generated by virtue of the demographic advantage and concomitant economic growth enjoyed by the United States. In the context of slowing economic growth, increased costs of labour, and defence spending that is being crowded out, no state or combination of states appears likely to overtake the United States' position of economic and military dominance. Haas (2010) argues that global aging is likely to extend US hegemony (because the other major powers will lack the resources necessary to overtake the United States' economic and military power lead) and deepen it as these other states are likely to fall even farther behind the United States. The demographic developments suggest that there is no other country on the horizon that is able to muster the American's combination of innovation, economic growth, and low ratio of spending on capital versus personnel (which is key to military dominance on the high-tech battlefield of fourth generation warfare). Global population aging is thus likely to generate considerable security benefits for North America.

Yet, population aging will also transform the security environment in challenging ways. As more countries, and especially NATO allies, face growing fiscal constraints, fewer allies will end up having to pay a growing share of the common international security interests. But even for those countries, which are relatively well positioned, that will become

increasingly difficult as they face their own fiscal challenges growing out of population aging. There will be a need to do more with less. In effect, the economic impact of population aging will challenge allied countries that lack the fiscal room necessary to maintain the extent of its global position and involvement, let alone adopt major new initiatives.

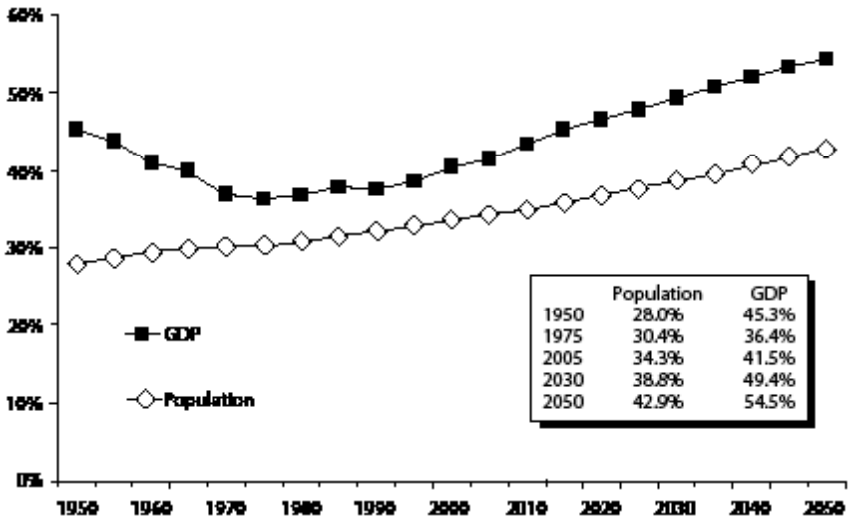
Compounding the problem is the fact that global aging may help make the twenty-first century a particularly dangerous time for US international interests. Population aging will beset much of the world at some point this century. In fact, the aging problem in many developing states is likely to be as acute as for industrialized countries, but the former have the added disadvantage of growing old before growing rich, thus greatly handicapping their ability to pay for elder-care costs (cf. Qiao 2006). If the strain on governments' resources caused by the cost of aging populations becomes sufficiently great, it has the potential to exacerbate systematically both the number of fragile states and the extent and depth of that fragility. As fragile states are prospective havens for organized crime and terrorism, the prospect of having to contend with a proliferation of fragile states with significantly fewer resources at the allies' disposal could prove the single greatest security challenge of this century (Jackson and Howe 2008, chap. 4-5). This is complemented by an already reduced capacity to realize other key international objectives, including preventing the proliferation of weapons of mass destruction (WMD), funding nation-building, engaging in military humanitarian interventions, and various other costly strategies of international conflict resolution and prevention.

Several important implications follow for defence and the armed forces. First, bilateral defence relationships will become even more important as the United State's proportion of the developed world's population and GDP continues to rise (Figure 12). Among its allies, America will be shouldering a growing fiscal burden of expenditures on international security. It needs a mitigation strategy which will be outlined below.

Population aging will hamper the ability of a number of allies to "step up to the plate." Afghanistan may already provide some preliminary empirical evidence to this effect. Following the logic of relative population aging, the Anglo-Saxon allies, that is, not only the United States but to a lesser extent Canada, the UK and Australia, are becoming relatively more important allies.

Second, as populations throughout the Americas mature and their economies develop, their strategic significance grows. As some traditional allies across Europe struggle in their ability to contribute financial and military prowess to international missions, Central and Latin American countries will be in a position to fill some of that void. Preliminary evidence to this end is evidenced by Mexican financial contributions to the reconstruction effort in Haiti as well as Brazil's military leadership in Haiti. Together, these countries will become cognizant that stable countries right across the continent are in their best interest as "pull" factors increase

**FIGURE 12**  
**US Population and GDP (in 2005 PPP dollars), as a Percentage of Developed-World Totals (1950–2050)**



Source: Cited in Jackson and Howe 2008, 192, Figure 5-5. Reproduced with permission from Jackson and Howe 2008.

with improved economic conditions, and “push” factors such as political instability in Haiti, persist. So, collaboration across the Americas is likely to grow. Yet many countries in the Americas harbour suspicions about US interests and, for political reasons, do not want to be seen as too cozy with the United States. This should provide an interesting opportunity for “middle-power” allies, such as Canada and Australia, to expand their traditional role of honest broker and take on a continental leadership role that should allow it to punch well above its weight.

Third, due to demographic aging, the probability of a major international war continues to diminish. Specifically, the demographic challenges faced by China and Russia make an international military conflict between one of them and North America increasingly unlikely. Haas (2007) refers to this as “a geriatric peace.” For the same reason, it is highly improbable that any disputes over the Arctic would ever escalate to the point of a war. Global aging also increases the likelihood of continued peaceful relations between the United States and other great powers. Copeland (2000) and Gilpin (1981) have shown that the probability of international conflict grows when either the dominant country anticipates a power transition in favour of a rising state or states, or when such a transition actually occurs. By adding substantial support to the continuation of US hegemony, global aging counteracts either outcome. Haas (2010) surmises that an aging world thus decreases the probability

that either hot or cold wars will develop between the United States and other great powers. Given its geopolitical location, this portends well, especially for Canada.

Fourth, due to youth bulges and echo booms in the arc of sub-Sahara through the Middle East and Asia, the world is likely to become more dangerous and unstable. When troops and reconstruction/development funds are deployed in the service of international security and stability, it will, in all likelihood, be in that part of the world. Where expeditionary, civil-affairs, and psychological-operations capabilities are concerned, allied armed forces ought to start preparing accordingly. Many of the West's immigrants originate in countries from this arc of instability. Given the likelihood of future involvement in the provision of security in this part of the world, diasporas will become increasingly important to mission success (and legitimacy).

Fifth, as apprehensive as countries may be about contributing troops, as situations arise where they deem intervention is in its interest, fewer allies will be in a position to contribute and those countries with more favourable demographic trends such as Canada, Australia, and New Zealand but also the UK, France, the Netherlands, and the Scandinavian countries, should prepare themselves (both at the level of mass psychology and operationally) to take on a greater share of the burden. This is not a normative observation but a sociological one: Among many of the traditional allies, the fiscal and defence capabilities are likely to erode further. So, if a country deems a given situation is in need of intervention, it will have to put its money (and troops) where its mouth is. At the same time, it may be able to mitigate some of that growing burden by providing assistance and collaborating more closely with the rest of the Americas.

Sixth, defence budgets will continue to be strained. Although the strain will be less than that experienced by some of its allies, population aging is bound to marginalize defence spending. So, allied armed forces should not be expecting significant increases in its budget or personnel. As funds become even scarcer than they already are, careful strategic planning will be imperative. For example, given the way international security will be developing, the potential need to deploy tanks is diminishing precipitously. With resources at a premium and the personnel-to-capital expense ratio on the rise, the armed forces cannot afford procurement "errors." For example, at its current 4-to-1 ratio on personnel vis-à-vis capital, the last thing the Canadian Forces will want to do is expand its troop strength. On the contrary, the CF will want to work on diminishing its troop levels to free up money for development and procurement. This will be especially difficult in a tight labour market that will cause the costs for highly qualified personnel to rise significantly. The only way out of this predicament is to curtail the size of the force, focus on education to impart requisite skills, and develop an aggressive plan to substitute capital for labour (or, at an absolute minimum, ensure



that personnel costs do not end up consuming even more of the defence budget than they already do).

Seventh, allies will have to minimize sub-optimal outcomes arising from collective action problems. That holds at the international level where, in light of these rising constraints, it will be in their interest to play a major role in international institutions and to make them work as best as it possibly can. That is, the allies must work actively to preserve and enhance soft power. Since the ability for NATO and its member countries to assert themselves on the ground will face mounting financial, personnel, and *matériel* constraints, the allies will have to maximize their returns from international institutions. Similarly, having to make do with less at home means allies will have to harness synergies among domestic institutions and government departments. The “whole-of-government” comprehensive approach *is* the future.

In sum, the opportunities and challenges for national and international security in an aging world are substantial. The aging crisis is less acute in some countries than in others. Where it is less acute, countries have better prospects to shape international security according to their national interests. Still, the magnitude of the costs will be unprecedented (due to the compound effect of diminished overall contributions and expanded demand), as will the constraints they will impose on defence spending.

The more countries sustain their comparative demographic advantage and relatively superior ability to pay for the costs of their elderly population, the more we are likely to see a middle-power renaissance among those allied countries that continue to enjoy fairly favourable demographic developments. It is in the allies’ strategic and defence interests to rein in the costs of old-age security and health care as much as possible, minimize the gap between elder-care obligations and resources set aside for them, raise the retirement age, and maintain as open an immigration policy as possible to keep their median age relatively low. Proactive policies that are designed both to take full advantage of the opportunities created by global aging while mitigating the costs created by this phenomenon will enhance international security through the twenty-first century.

## NOTES

1. To keep dependency rates of working-age adults to senior citizens at 1995 levels until 2050, for example, France would have to average 1.7 million immigrants per annum, Russia 4.7 million, Germany 3.4 million, and Japan 10 million. These figures vastly exceed historical norms (United Nations 2000, 24, 26).
2. For one possible explanation see Longman (2006).
3. In fact, its pro-natalist policies notwithstanding, Italy’s fertility rate is among the lowest in the world at 1.28.

4. The effects of China's one-child policy on median age notwithstanding, in 2008 the Chinese government significantly increased the fines for wealthy couples who violated the law and had more than one child.
5. Demographers are not particularly fond of this term because technically they are not bulges, only a large proportion of the population that is youthful.
6. A 2006 report by the European Defence Agency (2006) makes precisely this point.
7. In 1999, the United States' funded pension assets totaled 84 percent of GDP which is among the highest percentages in the world. Canada's were 55 percent funded. Germany's funded pension assets totaled 7 percent of GDP, and France's 5 percent (Culhane 2001, 14).
8. Only 27 percent of Americans believe that the national government should bear most of their retirement costs; this percentage ranged from 45 (France) to 72 (Spain) in European countries (AgeWave and HarrisInteractive 2009).
9. For the most comprehensive review of the subject with respect to Europe of which I am aware see Grant et al. (2004).

## REFERENCES

- Anderson, M., ed. 1996. *British Population History: From the Black Death to the Present Day*. Cambridge: Cambridge University Press.
- AgeWave and HarrisInteractive. 2009. *Retirement at the Tipping Point: The Year that Changed Everything. A National Study Exploring How Four Generations Think About Retirement*. At <http://www.agewave.com/RetirementTippingPoint.pdf> (accessed 31 March 2010).
- Bloom, D., D. Canning, and J. Sevilla. 2003. *The Demographic Dividend: A New Perspective on the Economic Consequences of Population Change*. Santa Monica, CA: RAND.
- Cincotta, R.P., R. Engelman, and D. Anastasion. 2003. *The Security Demographic: Population and Civil Conflict After the Cold War*. Washington, DC: Population Action International.
- Commission of the European Communities. 2000. *The Future Evolution of Social Protection from a Long-Term Point of View: Safe and Sustainable Pensions*. A Communication from the Commission to the Council, to the European Parliament and to the Economic and Social Committee, November, Brussels.
- Copeland, D.C. 2000. *The Origins of Major War*. Ithaca, NY: Cornell University Press.
- Culhane, M.M. 2001. *Global Aging: Capital Market Implications*. New York: Goldman Sachs Strategic Relationship Management Group.
- Easterlin, R.A., and E.M. Crimmins. 1985. *The Fertility Revolution: A Supply-Demand Analysis*. Chicago: University of Chicago Press.
- Eberstadt, N. 2001. The Population Implosion: Can America Be Saved? *Foreign Policy* 123 (March/April):42-53.
- 2006. Growing Old the Hard Way: China, Russia, India. *Policy Review* 136 (April/May).
- 2009. Drunken Nation: Russia's Depopulation Bomb. *World Affairs* 171 (4):51-62.
- Ehrlich, P. 1968. *The Population Bomb*. New York: Ballantine Books.
- England, R.S. 2005. *Aging China: The Demographic Challenge to China's Economic Prospects*. Westport, CT: Praeger.

- European Commission. 2004. *The Social Situation in the European Union: Overview*. At [http://europa.eu.int/comm/employment\\_social/social\\_situation/docs/ssr2004\\_brief\\_en.pdf](http://europa.eu.int/comm/employment_social/social_situation/docs/ssr2004_brief_en.pdf) (accessed 31 March 2010).
- European Defence Agency. 2006. *An Initial Long-Term Vision for European Defence Capability and Capacity Needs*. Brussels: EDA.
- Evans, M. 2009. Lethal Genes: The Urban Military Imperative and Western Strategy in the Early Twenty-First Century. *Journal of Strategic Studies* 32 (4):515-552.
- Ferguson, N. 2004. The Way We Live Now: 4-4-04; Eurabia? *The New York Times Magazine*, 4 April, p. 13.
- Friedman, B. 2005. *The Moral Consequences of Economic Growth*. New York: Alfred Knopf.
- Gilpin, R. 1981. *War and Change in World Politics*. Cambridge: Cambridge University Press.
- Goldstone, J.A. 2002. Population and Security: How Demographic Change can Lead to Violent Conflict. *Columbia Journal of International Affairs* 56:245-263.
- 2010. The New Population Bomb: The Four Mega-Trends that Will Change the World. *Foreign Affairs* 89 (1):31-43.
- Grant, J., S. Hoorens, S. Sivadasan, M. van het Loo, J. DaVanzo, L. Hale, S. Gibson, and W. Butz. 2004. *Low Fertility and Population Aging: Causes, Consequences, and Policy Options*. Santa Monica, CA: Rand Europe for the European Commission.
- Gruber, J., and D.A. Wise, eds. 1999. *Social Security and Retirement around the World*. Chicago: National Bureau of Economic Research, The University of Chicago Press.
- Gust, C., and J. Marquez. 2000. Productivity Developments Abroad. *Federal Reserve Bulletin* (83). Washington, DC: Federal Reserve System. At <http://www.federalreserve.gov/pubs/bulletin/2000/1000lead.pdf> (accessed 28 July 2010).
- Haas, M.L. 2007. A Geriatric Peace? The Future of US Power in a World of Aging Populations. *International Security* 32 (1):112-147.
- 2010. America's Golden Years? US Security in an Aging World. In *Political Demography: Interests, Conflict, and Institutions*, ed. M. Duffy Toft, J. Goldstone, and E. Kaufmann. New York: Palgrave Macmillan.
- Hahn, G.M. 2007. *Russia's Islamic Threat*. New Haven, CT: Yale University Press.
- Heinecken, L. 2001. Strategic Implications of HIV/AIDS in South Africa, Conflict, Security and Development. *Conflict, Security, Development* 1 (1):109-115.
- Homer-Dixon, T. 1999. *Environment, Scarcity, and Violence*. Princeton, NJ: Princeton University Press.
- Howe, N., and R. Jackson. 2004. *The Graying of the Middle Kingdom*. Washington, DC: Centre for Strategic and International Studies.
- Huntington, S. 1957. *The Soldier and the State: The Theory and Politics of Civil-Military Relations*. Boston: Belknap Press.
- 2004. *The Challenges to America's National Identity*. New York: Simon and Schuster.
- International Institute for Strategic Studies. 2010. *The Military Balance 2010*. London: IISS.
- Jackson, R., and N. Howe. 2008. *The Graying of the Great Powers: Demography and Geopolitics in the 21<sup>st</sup> Century*. Washington, DC: Center for Strategic and International Studies.
- Janowitz, M. 1960. *The Professional Soldier: A Social and Political Portrait*. Glencoe, IL: Free Press.

- Jingyuan, K. 2002. *Implicit Pension Debt and Its Repayment*. In *Restructuring China's Social Security System*, ed. M. Wang. Beijing: Foreign Languages Press.
- Kahl, C.C. 2006. *States, Scarcity, and Civil Strife in the Developing World*. Princeton, NJ: Princeton University Press.
- Kennedy, P. 1994. *Preparing for the Twenty-first Century*. New York: Vintage Books.
- Leahy, E., with R. Engelman, C. Gibb Vogel, S. Haddock, and T. Preston. 2007. *The Shape of Things to Come—Why Age Structure Matters To A Safer, More Equitable World*. Washington, DC: Population Action International.
- Livi-Bacci, M. 2007. *A Concise History of World Population*, 4<sup>th</sup> edition. Oxford: Blackwell.
- Longman, P. 2004. *The Empty Cradle: How Falling Birthrates Threaten World Prosperity and What to do about it*. New York: Basic Books.
- 2006. The Return of Patriarchy. *Foreign Policy* 153 (March/April):56-65.
- Maddison, A. 2007. *Contours of the World Economy 1-2030 AD: Essays in Macroeconomic History*. Oxford: Oxford University Press.
- National Intelligence Council (NIC). 2005. *Mapping the Global Future*. Washington, DC.
- 2008. The Demographic Discord. In *Global Trends 2025: A Transformed World*, chapter 2, 18-26. Washington, DC: National Intelligence Council.
- Nichiporuk, B. 2000. *The Security Dynamics of Demographic Factors*. Document MR-1088-WFHF/RF/DLPF/A. Santa Monica, CA: RAND Corporation.
- Nye, J.S. Jr. 2004. *Soft Power: The Means to Success in World Politics*. Online: Public Affairs.
- Organisation for Economic Co-operation and Development (OECD). 1999. *Health Data 1999, A Comparative Analysis of 29 Countries*. Paris: OECD.
- 2000a. *OECD Economic Outlook, No. 67* (June). Paris: OECD.
- 2000b. *OECD Economic Outlook, No. 68* (December). Paris: OECD.
- 2000c. *Social Expenditure Database*. Paris: OECD.
- 2009a. *Demographic and Labour Force Database, Society at a Glance: OECD Social Indicators 2009*. Paris: OECD.
- 2009b. *OECD Health Data 2009*. At <http://stats.oecd.org/Index.aspx?DataSetCode=HEALTH> (accessed 29 July 2010).
- People's Republic of China. 2004. Chapter IV: Defense Expenditure and Defense Assets. *White Paper on National Defense*. At <http://www.fas.org/nuke/guide/china/doctrine/natdef2004.html> (accessed 31 March 2010).
- Posen, B.R. 2003. Command of the Commons: The Military Foundation of U.S. Hegemony. *International Security* 28 (1):5-46.
- Qiao, H. 2006. *Will China Grow Old Before Getting Rich?* Global Economic Paper No. 138. New York: Goldman Sachs Economic Research Group.
- Roseveare, D., W. Leibfritz, D. Fore, and E. Wurzel. 1996. *Ageing Populations, Pension Systems and Government Budgets: Simulations for 20 OECD Countries*. Working Paper No. 168. Paris: OECD Economics Department.
- Stein, M. 2006. *America Alone: The End of the World as We Know It*. Washington, DC: Regnery Publishing.
- Taw, J.M., and B. Hoffman. 1994. *The Urbanization of Insurgency: The Potential Challenge for U.S. Army Operations*. Rand Monograph Report-398-A, chapter 2, 7-15. Santa Monica, CA: RAND.
- Teitelbaum, M.S., and J. Winter. 1998. *A Question of Numbers: High Migration, Low Fertility, and the Politics of National Identity*. New York: Hill and Wang.

- United Nations. 2000. *Replacement Migration: Is it a Solution to Declining and Ageing Populations?* Population Division, 20 March.
- 2007. *2007 Population Prospects*. Department of Economic and Social Affairs, Population Division. At <http://www.un.org/esa/population/> (accessed 28 July 2010).
- 2008. *World Population Prospects: The 2008 Revision Population Database*.
- United Nations Secretariat. Population Division. 2008. *World Urbanization Prospects: The 2007 Revision Population Database*. At <http://esa.un.org/unup> (accessed 31 March 2010).
- US Census Bureau (USCB). 2010. International Data Base. At <http://www.census.gov/ipc/www/idb/> (accessed 14 July 2010).
- Urdal, H. 2006. A Clash of Generations? Youth Bulges and Political Violence. *International Studies Quarterly* 50 (3):607-630.
- 2007. The Demographics of Political Violence: Youth Bulges, Insecurity and Conflict. In *Too Poor for Peace? Global Poverty, Conflict and Security in the 21st Century*, ed. L. Brainard and D. Chollet, 90-100. Washington, DC: Brookings Institution Press.
- Weigel, G. 2005. *The Cube and the Cathedral: Europe, America, and Politics without God*. New York: Basic Books.

