

THE SECURITY IMPLICATIONS OF DEMOGRAPHIC CHANGE:

AMERICAN AND EUROPEAN PERSPECTIVES

THE POLICY CONSEQUENCES OF DEMOGRAPHIC CHANGE in the social, economic, and political realm have been widely discussed throughout the past decade. With rising awareness of the population shifts ahead, policymakers have adjusted their agendas to aim for a balanced approach to the current needs of their citizens and the future needs of their increasing elderly population. One of the major implications of population aging is a decreasing number of young people available to work. Moreover, tightening government budgets, due to increasing welfare demands from the elderly, lower government revenues and create a smaller labor force. These discussions overlook the fact that domestic population shifts and national policy choices also have far-reaching consequences for foreign policy and the ability of nations to fulfill their commitments in collective security arrangements. As a result of changing demographics, national governments may have difficulty accommodating expenditures for defense and security. Also, political risk for policymakers to advocate defense budgeting in light of competing welfare demands can arise from this demographic change. Lastly, national armies may suffer from manpower shortages and may need to substitute capital for labor.

All Western countries will face the same challenges, but Western Europe will be hit especially hard by demographic aging. The direct and indirect consequences of demographic aging may undermine the capacity of European countries to provide for modern military forces. This will have implications for collective security arrangements and may be particularly worrisome in light of new security threats in the 21st century. Europe's difficulties may also hurt the transatlantic alliance since the U.S. wants a more equitable sharing of the security burden.

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This paper provides a framework for understanding the transatlantic security implications of demographic change and illuminates potential welfare-warfare tradeoffs. I will illustrate differing demographic trends in Europe and the United States and discuss the budgetary implications of demographic change. The paper also includes a review of collective security arrangements and relates the underperformance of European militaries to the requirements of the transatlantic alliance. The analysis considers the rising demand for military capacity in regions of transatlantic interest such as Pakistan, Afghanistan, Saudi Arabia, and Iraq and demonstrates the paradox that demographic change in political hot spots may be the cause of security challenges, while population change in the developed world may influence, and potentially undermine, the ability to shape the international security environment.

DEMOGRAPHIC TRENDS

The developed world is facing a population shift of unprecedented magnitude. With rising life expectancy and declining fertility, industrialized nations will become older and are likely to contract in the foreseeable future. Although these demographic trends are occurring throughout the developed world, Europe and the U.S. face different magnitudes of population change and decline. While European nations will experience rapid population aging due to low fertility, high life expectancy, and relatively low inward-migration, demographic trends for the United States look much more favorable.

EUROPE

The rapid population aging in Europe gives new meaning to the notion of an "old continent." Europe's population currently has the world's highest median age of 37.7 years, and by the year 2050 this measure is projected to rise to 48 years.¹ Illustrated by Figure 1, currently 19 of the world's oldest nations are located in Europe as measured by the share of the population aged 65 and older. The graying of Europe stems from the rapid increase in the elderly population above age 65 and the contraction of the young population below age 20. Low fertility over the past decades created successively smaller cohorts and predisposed the continent to an aging and declining population. Unlike the 1960s, in which the developed world experienced the so-called baby boom with fertility rates above

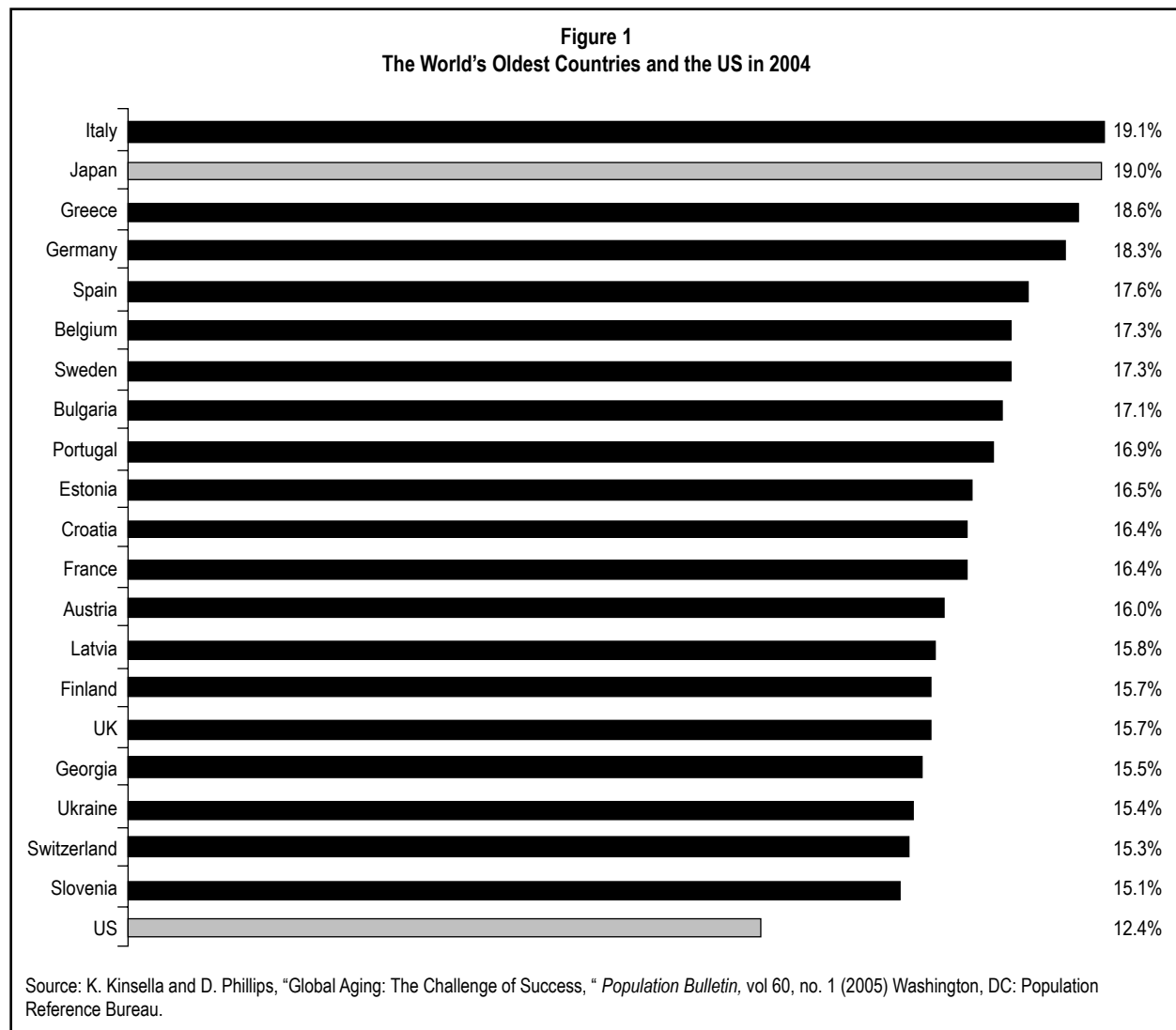
2.5 children per woman in Western Europe, fertility rates have experienced a rapid decline.²

Today, Europe's overall fertility rate stands at 1.4. Fertility is below average in the Mediterranean countries, where Italy and Spain have only 1.2 children per woman. Some Central and Eastern European countries have reached even lower fertility levels. On the other hand, France and the North exhibit above average fertility. For instance, France and Ireland have the highest fertility rates in Europe with 1.8 each.³ The German fertility rate is in line with the European average, standing at 1.4 after recovering from the radical post-unification decline.⁴ All European countries fall short of the replacement rate of 2.1 children per woman, which refers to the total fertility level that exactly balances births and deaths—zero population growth. Given the low rates of fertility, the total population size of Europe will continue to decline. This decline also implies a reduction in the size of the labor force. By the year 2050, the size of the economically active population in Germany and Italy will decline by 18 and 39 percent, respectively, while France and the United Kingdom face less severe declines of 11 percent each.⁵

THE UNITED STATES

The United States also faces a demographic transition. However, population aging will be much more moderate than in Europe, and the total population is still projected to grow.⁶ Eberstadt characterizes the U.S. population situation as "demographic exceptionalism"⁷ among the affluent industrialized nations since it is the only major exception to Western demographic patterns. High fertility and immigration make the U.S. the youngest country of the developed world despite population aging. In fact, America's fertility rate, at 2.0 children per woman, is above the international average.⁸

The gap between transatlantic fertility rates may stem from differences in the perception of the government's role, as well as interpretations of individualism, patriotism, and religiosity. While Americans tend to describe the role of the government as "providing freedom," Europeans interpret the government's function as "guaranteeing one's needs."⁹ The American view implies only limited government intervention and economic self-sufficiency of every citizen. Thus, today's high fertility in the U.S. may be connected to the traditional function of reproduction; namely, having children to provide economic security in old age. With far-reaching welfare regimes in most European countries, the



need for children as an insurance against old-age poverty seems unnecessary today and potentially explains Europe's low fertility rates.

BUDGETARY IMPLICATIONS OF DEMOGRAPHIC CHANGE

Demographic aging results in a decrease in the economically active population and an increase in the elderly population entitled to social welfare payments. This event has two-fold implications: Governments will experience revenue declines even while they face increased demand for retirement payments and social contributions. Tradeoffs must come from discretionary spending because funding for entitlement spending is mandatory. The U.S.'s private approach to pensions and healthcare entails

fewer budgetary difficulties and a higher capacity for military spending than in Europe.

DETERMINANTS OF BUDGET ALLOCATION

The existence of a budgetary tradeoff between defense and social welfare spending has received considerable discussion.¹⁰ These studies attribute differences in defense expenditures to a variety of factors such as military conflict, external threats, policies of deterrence, economic downturns, domestic preferences, public opinion, and powerful lobbies. Moreover, military expenditures seem correlated with a government's social spending, tax revenues, and fiscal deficit.¹¹ Other authors relate differences in domestic welfare spending to changing demographic patterns and varying interest group activity.¹² They also argue that the size of the elderly population is an important factor for

the success of domestic spending in the budgetary resource struggle. This trend seems related to the lower number of children and the societal move toward looser living arrangements, which fail to provide the degree of old-age assistance and informal care that the elderly traditionally received from their families. A growing elderly population also possesses considerable political group power.¹³

HEALTHCARE AND PENSIONS

Population aging will increase government outlays for pensions and healthcare programs. Due to the magnitude of the demographic shift, the sustainability of current retirement, health, and long-term care arrangements will face challenges. According to recent projections, the member states of the Organization for Economic Cooperation and Development (OECD) may experience public spending increases of 11 to 18 percent for pension and health benefits for the elderly over the next 50 years.¹⁴ As a consequence, governments will need to make far-reaching judgment calls including lowering public benefits, raising taxes, increasing individual contribution rates, or cutting spending unrelated to aging. However, all of these options are highly unpopular, especially in Europe.

Worldwide, Europe maintains the earliest retirement ages and highest wage replacement rates—the ratio of retirement income relative to pre-retirement earnings.¹⁵ For example, the wage replacement rates in France, Germany, and Norway are between 50 to 75 percent. Austria and Italy replace close to 90 percent of the wage earner's salary. In addition to these replacement rates, pensions comprise a significant concern. Italy's public pension system is among Europe's most expensive, currently consuming 14 percent of GDP. Meanwhile, the UK spends only half of what the average country in continental Europe pays for public pensions.¹⁶ However, this thrift results in relatively lower living standards for the elderly, and puts them at higher risk for old-age poverty and a lack of adequate healthcare.

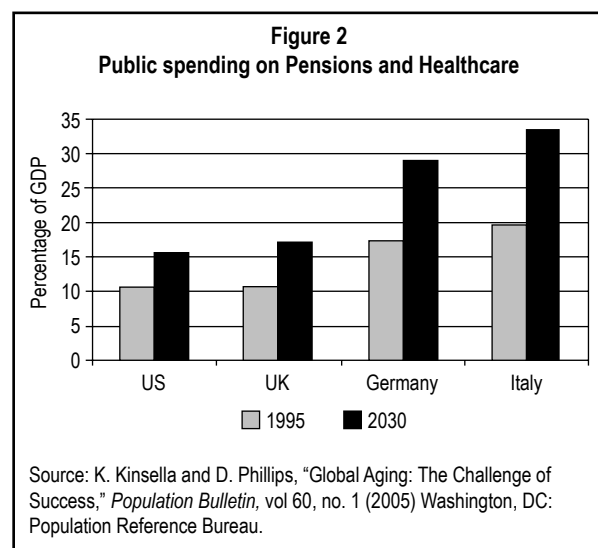
In comparison with Europe, the U.S. maintains a relatively inexpensive public pension system. Replacement rates approach 40 percent, and actual retirement ages are higher. About half of the U.S. labor force population retires at age 62, short of the 65 years and four months¹⁷ needed to receive full benefits. Private pension systems limit the government's cost of aging. Yet fiscal challenges may arise from the U.S. healthcare system, which is the most costly in the world. Healthcare costs are projected to rise even further given extended survival and population aging, as illustrated in Figure 2. The UK,

Germany, and Italy will also experience significant spending increases from 1995 to 2030. The burden will be especially large for the two oldest countries, Germany and Italy.

In order to absorb the rising burden of pension and healthcare spending, large increases in productivity and economic growth are necessary.¹⁸ However, an aging population inhibits innovation and economic development. For centuries, population growth has been "the mother of necessity,"¹⁹ but with a shrinking supply of labor, aging societies may be unable to maximize economic efficiency.

MILITARY EXPENDITURES

Given the economic and political implications of demographic change, many developed countries will face difficulties in maintaining defense and international security expenditures.²⁰ These challenges arise from financially strained government budgets caused by the growing retirement population and increased political pressures to preserve domestic welfare systems. Consequently, population aging may undermine countries' military capabilities. In this connection, demography works on two fronts. First, increased demand for public pensions and healthcare creates a more competitive public budgeting process. Aging translates into higher government outlays for the elderly and lower tax revenue for the government. This process may have implications for the defense budget of an aging society. Also, with a changing age structure and an increasing proportion of elderly citizens, preferences may shift away from defense spending. Second, recruitment for and maintenance of the military will become increasingly expensive. Throughout Western welfare states, governments



are especially reluctant to push defense modernization and increase military outlays in times of social spending cuts.²¹ Moreover, the decreasing number of young people will cause difficulties for militaries to reach their recruitment targets. An increase in financial and economic incentives may be necessary to attract talented young people into the armed forces.

Throughout the Cold War, the ratio of combined military expenditures by European members of the North Atlantic Treaty Organization (NATO) was constant—60 percent of U.S. outlays. By 2000, this ratio had dropped to 40 percent.²² Figure 3 displays this downward trend graphically and indicates a “peace dividend”²³ after the end of the Cold War, when military expenditures fell in absence of a direct threat. Comparing the country estimates, military spending is highest in the United States, followed by the UK and France. After more than a decade of decline, Figure 3 suggests a turn in defense spending patterns in 2001/02 in response to the September 11 attacks.

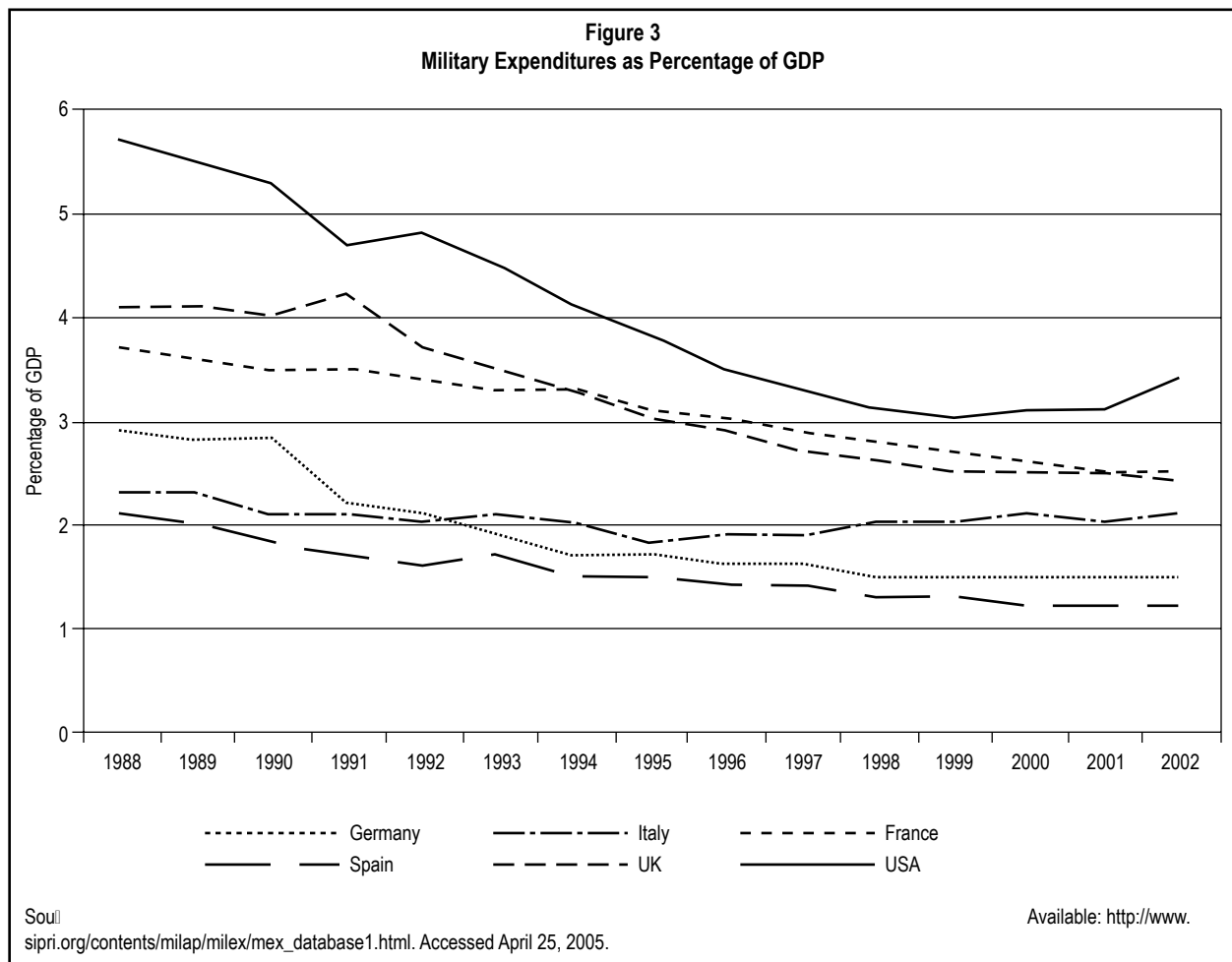
MILITARY CAPABILITIES AND SECURITY

The military capabilities of a country depend largely on the numerical strength of its army and the state of its operational equipment. Demographic change influences these factors directly and indirectly. While demographic change impedes the ability of developed countries to fulfill military capability, population developments may work as a catalyst for security challenges in developing countries.

MILITARY MANPOWER VERSUS CAPITAL

A country’s population is an important factor in determining national power. Population size, as well as the quality and level of skill of the labor force, contribute to a country’s influence in the international system. Moreover, demographic factors like environmental degradation, mass migration, resource depletion, forced refugee flows, ethnic conflicts, and urbanization work as drivers of power and shapers of political instability.²⁴

Historically, the fate of nations has been linked



to demography. Relative population decline was associated with a loss in military, economic, and cultural dominance. In the 18th century, population growth combined with economic fears gave rise to the expansionary policies pursued by Great Britain, China, India, Japan, and France, and worked as a catalyst for domestic revolutions and trans-border expansion.²⁵

In the future, the size of armies will lose importance because the modern military has shifted away from manpower-intense operations. The new face of war will be high-tech, "cruise-missile" intervention in order to minimize the loss of life.²⁶ This capital-for-labor substitution accords with demographic trends. Due to the declining number of young people, armed forces face manpower shortages and fierce competition with the civilian labor market for the scarce resource of youth. However, aging not only makes young people rare; it also depletes government budgets, making funding for high-tech military equipment uncertain. Smaller military forces generate savings from reduced personnel costs, which could be used to acquire new military technology. As a result of these demographic pressures and budget constraints, military forces likely will become progressively smaller in the future.

RISING INTERNATIONAL RISKS

Security analysts contend that population pressures and movements do not, on their own, cause conflict. Rather, demographic change works as the last straw in regions already strained by territorial, ideological, or environmental conflict and economic hardship.²⁷ However, three demographic factors have profound security implications: increasing divergence of fertility patterns in developing nations, below-replacement fertility in developed nations, and increasing urbanization of the world's population.²⁸

In contrast to the population decline underway in the Western world, many developing nations are growing and becoming proportionally younger. In 2020, the largest proportional youth populations will be located in Pakistan, Afghanistan, Saudi Arabia, Yemen, and Iraq.²⁹ Regions with high fertility and competition for scarce resources are expected to be particularly unstable. Population growth will make these regions weaker due to their greater susceptibility to disease and extremist political and religious movements. Failure to integrate the large cohorts of young people in the Middle East and Sub-Saharan Africa may spur the cycle of political instability and conflict. Unemployment and economic hardship reduces the opportunity costs for young

people to engage in conflict because such conditions make them feel as if they have less to lose.³⁰ Political instability in these regions will undermine efforts to generate economic growth and attract foreign direct capital needed to create jobs.³¹

The increasing scale and frequency of humanitarian crises in regions like Sub-Saharan Africa will generate large refugee flows and may require the U.S. and European countries to pay more attention to hot spots that traditionally have not been on their foreign policy agendas. Fertility rates of 6.1 children per woman in Sierra Leone and 6.3 in Liberia may fuel humanitarian crises and make these countries more vulnerable to famines, epidemics, and violence.³²

REMEDIES TO EUROPE'S LACK OF FIREPOWER

The current debate on military expenditures focuses primarily on the consequences of decreased spending while largely overlooking the "arithmetic of defense policy."³³ An inflationary problem associated with national defense exists in the sense that even if spending levels stay constant in real terms, a decrease in force levels and capabilities is inevitable. This inflation arises as staffing and equipping multi-purpose forces becomes increasingly expensive. Military personnel costs rise slightly above inflation. For example, a British sergeant was paid £3,800 in 1975. In line with inflation, he would earn approximately £19,000 today, but the true current wage level is £23,000, some 20 percent higher.³⁴ The analysis of inflationary equipment spending is more complicated due to the advancement of technology and the functional changes associated with each new generation of equipment. However, to give an example, a Lancaster bomber in 1945 cost £45,000 (about £1 million at today's prices). When its linear successor, the Tornado bomber, was introduced in 1980, it cost the same as 20 Lancaster bombers in real terms.³⁵

Rising prices hit the military forces in Europe especially hard since their programs already suffer from aging fleets and retention problems. Moreover, the fragmented approach to European security is inefficient, with duplication of headquarters, planning, training, procurement, research, and bases. To counteract the "defense arithmetic" and remain competitive despite their aging societies, European countries need to enhance common procurement and greater integration of national defense efforts.³⁶ Opportunities for pooling of resources include sharing headquarters, aircraft capabilities, marine

equipment, and naval training facilities. All of these options aim to diversify capital-intensive investments among EU member states.³⁷ Such a streamlining of military policies would circumvent budget limitations on the national level and enable a common European force to pool funds for advanced new weapon systems. Should Western European governments prove unable to enhance their capital bases and human resources by coordinating national defense efforts, a decline in European military capability over the next two decades seems unavoidable.³⁸

A number of European countries are attempting to transform their militaries into smaller, more mobile task forces. Such modernization is costly, and with tight budgets, governments have to allocate resources to better use funds and eliminate outdated equipment. With high cost increases for each new generation of weapon systems, there is an inclination by defense establishments to keep old stock and acquire new weapons at a slow rate.³⁹ However, this tendency commits capital that governments may use more efficiently. Germany, France, and the UK are in the process of setting up a joint task force, which will enable their national armies to reduce personnel, improve training of recruits, and share equipment costs. This arrangement will alleviate the national security burden for all countries, particularly Germany, which has historically spent too much on staffing and too little on equipment. Previous German defense budgets allocated more than half of available funds to salaries, and only 13 percent to new equipment—a level well below the 30 percent that security specialists believe is necessary to modernize armed forces.⁴⁰

The U.S. looks upon European procurement efforts with suspicion. Most EU member states have consistently cut their defense budgets since the end of the Cold War. U.S. officials argue that Europe should develop greater military capacities rather than new institutions. A common defense policy may “decouple” Europe from the U.S. and duplicate NATO efforts and responsibilities.⁴¹ Still, no alternative appears for Europe and a common defense policy is consistent with efforts of European integration. An integrated European military would

also assist the U.S. in managing international crises and demonstrating leadership in traditional and new hot spots.

COLLECTIVE SECURITY AND STATE PREFERENCES

Collective security arrangements provide deterrence for their member states.⁴² Although all members of the alliance are supposed to provide deterrence, smaller states aim to “free ride” on the security provisions of larger nations. The aim of security cooperation is to realize joint gains and reduce the costs of non-reciprocated cooperation of a few states.⁴³

Domestic politics are a decisive variable for the degree of engagement in the security alliance.⁴⁴ State

preferences heavily influence national policy agendas and entail a set of fundamental national interests independent from strategic considerations of other states. State preferences are not static and are subject to change under societal pressures. Thus,

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states do not adhere to a given set of conceptions of security and welfare. Rather, they pursue combinations of different public goods that represent the will of powerful domestic groups.⁴⁵

As for security policies, state preferences are mostly a result of threat perception. Europeans and Americans differ sharply in their perception of threats and their evaluations of the nature and source of security challenges.⁴⁶ This discrepancy becomes evident in the respective assessment of hard power and soft power (that is, the use of force and diplomacy), as well as differing spending levels on national defense and security. For example, despite the fact that Germans have recognized the new security threats to which their military is adjusting, the public remains unconvinced that increases in military spending are necessary. Germany was the least supportive Western nation of defense spending, which mirrors in the country’s soft power approach and its emphasis on humanitarian assistance, peacekeeping operations, crisis management and prevention, and peace enforcement operations.⁴⁷

Figure 4 sheds light on state's preferences and varying perception of threats. Health and education comprise the largest share of public expenditures in all countries throughout the period of observation. Seemingly, information on preferences for security may be revealed only through an intrastate comparison of spending rather than through an international comparison. For example, Germany exhibits a clear preference for social over defense spending, while the spending categories in the UK are not as clearly differentiated.

POLITICS OF AGING

Demographic change brings about a graying of the electorate. By the year 2030, almost half of the adult population in the developed world will be at or beyond the current retirement age.⁴⁸ Due to the sheer size of the elderly population, older voters will have immense political power in the future, and political leaders may feel compelled to preserve old-age entitlement programs that are fiscally and economically unsustainable in the long run. Since security and defense policies are detached from welfare issues and do not provide direct economic benefit to the individual, these issues are likely to be ineffective at mobilizing older voters and, thus, may fall behind in the political discourse.⁴⁹

The elderly in aging societies have not yet begun to use strategic voting to push their economic demands. Most divisions within the electorate are still along party lines. However, a larger portion of Europe's population is of working age than at any point in the region's history. Once the baby boomers all reach retirement age, election radicalization along age-sensitive, generational topics will become prominent due to scarce resources. Recent elections in the Netherlands and Russia provide a taste of the future, when parties particularly appealing to senior voters scored high.⁵⁰ In most of Eastern Europe, the Communist Party has evolved as the "de facto party of pensioners."⁵¹

The French researcher Vincent and his colleagues doubt the significance of "senior power" in Europe.⁵² He reasons that social divergence caused by varying social class, retirement benefit status, savings, and health among Europe's elderly undermines political cohesion and prevents the elderly from emerging as a politically effective force. These socioeconomic differences lead to a fragmentation of old-age politics and make it difficult for the elderly to agree on and realize common goals. Vincent further presumes that the elderly in the electorate

do not engage in tactical voting and are not driven by individual benefit maximization.⁵³ He argues that the idea of "senior power" is overstated and mistakenly arises when the popularity of the welfare state is confused with the electoral power of older people. Thus, society's collective interest in protecting entitlements drives opposition to welfare cuts rather than the electoral power of seniors.

Nonetheless, indisputably senior citizens will have considerable political power through their sheer size and potential to influence election outcomes. Thus, government officials need to understand the demands of the older population to ensure their reelection. And, this electoral potential draws the relevant question of defense spending. With a larger proportion of older citizens in the electorate, more difficulty to justify welfare cuts for the elderly will arise in conjunction with an increase in defense spending to modernize the armed forces. Older voters may draw the conclusion that they have to forego retirement income to finance military intervention in foreign countries, and this decision creates a high political risk. Thus, policymakers will

Figure 4
Public Expenditures as Percentage of GDP

FRANCE	1998	1999	2000	2001	2002
Military*	2.8	2.7	2.6	2.5	2.5
Health**	9.3	9.3	9.3	9.4	9.7
Education***	5.9	5.8	5.8	5.7	...
GERMANY	1998	1999	2000	2001	2002
Military*	1.5	1.5	1.5	1.5	1.5
Health**	10.6	10.6	10.6	10.8	10.9
Education***	4.7	4.6	4.5	4.6	...
ITALY	1998	1999	2000	2001	2002
Military*	2.0	2.0	2.1	2.0	2.1
Health**	7.7	7.8	8.1	8.3	8.5
Education***	4.7	4.5	4.6	5.0	...
SPAIN	1998	1999	2000	2001	2002
Military*	1.3	1.3	1.2	1.2	1.2
Health**	7.5	7.5	7.5	7.5	7.6
Education***	4.5	4.5	4.4	4.4	...
UK	1998	1999	2000	2001	2002
Military*	2.6	2.5	2.5	2.5	2.4
Health**	6.9	7.2	7.3	7.5	7.7
Education***	4.6	4.7	4.8
USA	1998	1999	2000	2001	2002
Military*	3.1	3.0	3.1	3.1	3.4
Health**	13.0	13.0	13.1	13.9	14.6
Education***	5.4	...	5.7

Sources: *SIPRI 2005, **OECD 2004, ***UNESCO 2005
(See Works Cited for full citation)

play by the rules and comply with the demands of their older electorate. However, with a fixed amount of government revenue and stringent monetary policies as in the European Monetary Union, the allocation of increasing budget shares to seniors may imply spending decreases in other policy areas such as defense.

DISCUSSION AND OUTLOOK

The economic, fiscal, and political implications of demographic change will profoundly affect domestic and foreign policies, and may undermine a country's capacity to accommodate security commitments and provide for military capacity. However, the influence of demography on foreign policy and security strategy is often overlooked. Especially in Europe, where governments are struggling to adjust their welfare policies to demographic realities, policymakers fall short of addressing the demand and supply issues of their militaries arising from population aging.

While it is difficult to isolate direct tradeoffs between budget decisions involving welfare over warfare, demographic change will undoubtedly influence international security. The reluctance of governments to increase warfare in times of welfare cuts seems indicative for the tradeoff hypothesis. European policymakers are wise in not bringing future military requirements and financial needs to the forefront of the public discussion since they may be confronted with the claim that military spending takes away from welfare spending. Meanwhile, the U.S. attitude is hardening in the belief that spending for the increasing elderly population crowds out military investment—a detriment to the transatlantic alliance.

The relative abundance of research from U.S. institutions suggests that the topic is more widely recognized in the U.S. than in Europe. More recent research suggests that U.S. researchers are actually concerned with the impact of *increased* military spending on health, education, and living standards rather than decreased defense spending. Given the war on terror and military operations in Iraq and Afghanistan, concerns about the socioeconomic implications of such massive foreign policy spending appear to be justified. In view of the limited research specifically targeted at the security implications of demographic change, drawing a unanimous conclusion about the transatlantic partnership is impossible. Two possible future scenarios exist. In one, Europe's militaries are reduced to a point where

they can no longer participate in military actions and fulfill their commitment to preserving global stability, so the U.S. passes Europe over altogether.⁵⁴ Alternatively, Europe could successfully establish a common defense policy and reinforce its significance in the world and vis-à-vis the United States.

The future of the transatlantic alliance is uncertain. Despite historical unity and partnership, divergent foreign policy objectives and different capacities to absorb international responsibilities may potentially drive the U.S. and Europe apart.⁵⁵ While the U.S. hopes for a more equitable sharing of international security responsibilities, Europe faces an unprecedented demographic shift and is likely to increasingly look inward as its population ages. Divergent demographics will drive differences in capabilities and outlook on either side of the Atlantic and will undermine European efforts to build up significant military structures. The costs of population aging will heavily burden government budgets and may crowd out spending for other policy dimensions like security.⁵⁶ At the same time, the temptation in Europe to protect internal stability and national prosperity with a relative indifference to the state of the rest of the world has become prominent.⁵⁷ Collective risk aversion and an unwillingness to accept social welfare cuts fuels this tendency. However, entirely avoiding international responsibilities is risky. A number of countries in the Middle East and Asia will experience extraordinary population growth and become home to disproportionately high numbers of young people. Demographic factors both increase the likelihood of regional instability and may require international military intervention.

Given the gloomy population and fiscal projections for Europe, the only remedy to the current lack of firepower is to increase cooperation within the EU, pool national defense budgets, and build credible EU military forces. Mutual efforts will be needed to enhance the industrial and technological defense base and streamline military requirements and human resource allocations.⁵⁸ Such an enhancement within the European Union may produce a more equitable contribution to the shared transatlantic burden. This enhancement is also the only option to prevent divergent aging patterns from driving an irreversible wedge between the U.S. and Europe.

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