



**NAVAL
POSTGRADUATE
SCHOOL**

MONTEREY, CALIFORNIA

THESIS

**THE INFLUENCE OF DEMOGRAPHY ON EUROPEAN
AND FUTURE ARMED FORCES**

by

Ekkehard Stemmer

June 2005

Thesis Advisor:
Second Reader:

Donald Abenheim
Robert E. Looney

Approved for public release; distribution unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE June 2005	3. REPORT TYPE AND DATES COVERED Master's Thesis		
4. TITLE AND SUBTITLE: The Influence of Demography on European and Future Armed Forces			5. FUNDING NUMBERS	
6. AUTHOR(S) Ekkehard Stemmer				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) Such demographic factors in Europe as low fertility rates, high life expectancy, and the restricted immigration policy have caused European societies to age rapidly and the population of Europe will dramatically decline over the next thirty years. In comparison to Europe, the trend of aging in developing counties, for example in the Middle East and Northern Africa, presents a stark contrast. Taking into account demographic trends like aging, global distribution of the population, and migration, Europe faces increasing geopolitical challenges in the future, based on the cleavages "north versus south," "rich versus poor," and "old versus young." From a domestic point of view of Continental Europe, the demographic factors are responsible not only for a declining workforce but also for increasing retirement rates. The consequences are a decreasing GDP and increasing social welfare costs. So, further development of European armed forces in an uncertain world has to take place in this tense financial situation. Taking the goals of the European Security Strategy into account and considering the necessity that the military capabilities have to be adapted to meet a new threat scenario, this thesis tries to illustrate why Europe has to intensify its efforts of European military integration, mindful of the limitation of demography and politics.				
14. SUBJECT TERMS Demography, Demographic Development, Demographic Trends, Fertility, Mortality, Birth Rate, Migration, Dependency Ratio, Europe, Germany, Great Britain, France, Italy, Defense Budget, Social Budget, European Security and Defense Strategy (ESDS), NATO's Defense Capabilities Initiative (DCI), Gross Domestic Product (GDP)			15. NUMBER OF PAGES 157	16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

**THE INFLUENCE OF DEMOGRAPHY ON EUROPEAN AND FUTURE
ARMED FORCES**

Ekkehard Stemmer
Lieutenant Colonel, German Air Force
Master, Federal Armed Forces' University, 1987

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

from the

**NAVAL POSTGRADUATE SCHOOL
June 2005**

Author: Ekkehard Stemmer

Approved by: Donald Abenheim
Thesis Advisor

Robert E. Looney
Second Reader/Co-Advisor

Douglas Porch
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Such demographic factors in Europe as low fertility rates, high life expectancy, and the restricted immigration policy have caused European societies to age rapidly and the population of Europe will dramatically decline over the next thirty years. In comparison to Europe, the trend of aging in developing countries, for example in the Middle East and Northern Africa, presents a stark contrast. Taking into account demographic trends like aging, global distribution of the population, and migration, Europe faces increasing geopolitical challenges in the future, based on the cleavages “north versus south,” “rich versus poor,” and “old versus young.”

From a domestic point of view of Continental Europe, the demographic factors are responsible not only for a declining workforce but also for increasing retirement rates. The consequences are a decreasing GDP and increasing social welfare costs. So, further development of European armed forces in an uncertain world has to take place in this tense financial situation.

Taking the goals of the European Security Strategy into account and considering the necessity that the military capabilities have to be adapted to meet a new threat scenario, this thesis tries to illustrate why Europe has to intensify its efforts of European military integration, mindful of the limitation of demography and politics.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	IMPORTANCE.....	1
B.	HYPOTHESIS AND RESEARCH QUESTION.....	4
C.	METHODOLOGY AND SOURCES.....	5
D.	ORGANIZATION OF THE THESIS.....	6
II.	DEFINITIONS.....	9
III.	POPULATION AND NATIONAL POWER IN HISTORY.....	11
IV.	KEY DEMOGRAPHIC VARIABLES.....	19
A.	FERTILITY.....	19
B.	MORTALITY.....	24
C.	MIGRATION.....	24
1.	Impact on the Receiving European Countries.....	28
2.	Impact on Sending Countries.....	30
V.	STRATEGIC IMPLICATIONS OF DEMOGRAPHIC TRENDS.....	33
A.	AGING VERSUS YOUTH BULGE.....	33
1.	General Development.....	33
2.	The Implications of Aging on the European Society.....	38
3.	The Implications of the Youth Bulge on Developing Countries.....	41
B.	URBANIZATION AND URBAN GROWTH.....	47
C.	DRAIN ON RESOURCES – WATER AND ARABLE LAND.....	51
D.	DEMOGRAPHIC TRENDS AND THEIR IMPLICATION ON FUTURE CONFLICTS.....	55
1.	Demography and Future Conflicts.....	56
a.	<i>The Physical Environment.....</i>	57
b.	<i>New Strategic Means.....</i>	58
2.	Changes in Sources of National Power.....	60
3.	Changes in Sources of Conflict.....	63
VI.	EUROPEAN SECURITY PERCEPTION AND CAPABILITIES.....	67
A.	NATO AND THE EUROPEAN UNION FROM 1990 TO 1998.....	68
1.	From Rome to Madrid.....	68
2.	From Maastricht to Amsterdam via Madrid.....	69
B.	NATO AND THE EUROPEAN UNION FROM 1998 TO 2001.....	71
1.	NATO’s Capability Gap – The Historical Dimension from 1950 to 1970.....	71
2.	The Washington Summit and NATO’s Defense Capability Initiative.....	75
3.	From St. Mâlo to Nice.....	75
C.	NATO AND THE EUROPEAN UNION FROM 2001 TO 2004.....	78
1.	NATO Prague Summit, November 2002.....	78

2.	From the Capabilities Commitments Conference to the European Security Strategy	79
D.	A SUMMARY AND THE BUDGET QUESTION	80
VII.	THE EUROPEAN ARMED FORCES UNDER FINANCIAL AND SOCIO-POLITICAL CONSTRAINTS	85
A.	DEMOGRAPHIC INFLUENCE ON THE ECONOMIC DEVELOPMENT IN EUROPE AND ON THE SOCIAL SYSTEM	86
1.	The Impact of Aging on the Economy.....	86
a.	<i>Age-related Economic Transmission Mechanics</i>	87
b.	<i>Key Variable of the Quest II Approach</i>	89
c.	<i>Central Aging Scenario and Results</i>	90
2.	Future Economic Development of European Countries	91
3.	Future Development of Social Expenditures.....	93
a.	<i>General Definitions</i>	93
b.	<i>The Development of Future Public Expenditures on Pensions</i>	94
c.	<i>The Development of Future Public Expenditures on Health Care</i>	95
d.	<i>The Development of Future Public Expenditures on Education and on Unemployment Benefits</i>	96
e.	<i>The Overall Impact of Aging on Public Expenditures</i>	97
B.	THE EUROPEAN DEFENSE EFFORTS UNDER FINANCIAL AND SOCIO-POLITICAL CONSTRAINTS	101
1.	Definitions.....	102
2.	The Development of European Defense Expenditures – A Case Study.....	103
3.	Assessments and Perceptions	112
VIII.	EUROPEAN POLITICAL - MILITARY POLICY OPTIONS.....	117
A.	CURRENT REFORM AND TRANSFORMATION PROCESSES	117
B.	POSSIBLE FUTURE POLICY OPTIONS	121
IX.	CONCLUSION	125
	APPENDIX.....	129
	BIBLIOGRAPHY	131
	INITIAL DISTRIBUTION LIST	141

LIST OF FIGURES

Figure 1.	Population history of selected European countries	11
Figure 2.	Regional Total Fertility Rate	20
Figure 3.	Total Fertility Rate Distribution.....	21
Figure 4.	School Life Expectancy	22
Figure 5.	Share of Women in the Labor Force.....	23
Figure 6.	Migration in Europe, North Africa and the Middle East	27
Figure 7.	Distribution of Rural and Urban Population.....	31
Figure 8.	Rate of Natural Increase.....	34
Figure 9.	Population Growth in European Countries	35
Figure 10.	Population Growth in Developing Regions	35
Figure 11.	Development of the Algerian Population from 1950 to 2050.....	36
Figure 12.	Development of the Algerian Population from 1950 to 2050.....	36
Figure 13.	Development of the Occupied Palestinian Territory's Population from 1950 to 2050	37
Figure 14.	Growth Rate of Young Adults and GDP per Capita.....	43
Figure 15.	Change of Stress Level from 2005 to 2025	46
Figure 16.	Average Annual Urban Growth Rate 1985 - 2015	50
Figure 17.	Renewable Water Resources per Capita	53
Figure 18.	Cropland per Capita	55
Figure 19.	EU 4 Real GDP Growth in 1995 Prices.....	92
Figure 20.	Projection of Public Expenditures for Germany	99
Figure 21.	Projection of Public Expenditures for France	99
Figure 22.	Projection of Public Expenditures for Italy	100
Figure 23.	Projection of Public Expenditures for Great Britain.....	100
Figure 24.	Defense Expenditures in Constant Prices and Exchange Rates of 2000	104
Figure 25.	Defense Expenditure USA versus EU 4	104
Figure 26.	Annual Change of Defense Expenditures Based on Real Terms.....	105
Figure 27.	Defense Expenditures per Capita.....	106
Figure 28.	Defense Expenditures per Soldier.....	107
Figure 29.	Research and Development Expenditures	108
Figure 30.	Research and Development Expenditures per Soldier.....	109
Figure 31.	German Defense Expenditure - Distribution by Category.....	110
Figure 32.	Italian Defense Expenditure - Distribution by Category	110
Figure 33.	British Defense Expenditure - Distribution by Category.....	111
Figure 34.	French Defense Expenditure - Distribution by Category	111

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	Decline of Labor Force in 1000	39
Table 2.	Old-Age Dependency Ratio.....	40
Table 3.	Stress Level Categories.....	45
Table 4.	Stress Level Categories.....	50
Table 5.	Future GDP Growth Rates	92
Table 6.	Projection for Spending on Public Pensions as a Share of GDP, Current Policy Scenario	94
Table 7.	Projection for Spending on Public Pensions in Constant Prices of 1995, Current Policy Scenario	95
Table 8.	Projection for Spending on Health Care as a Share of GDP, Current Policy Scenario.....	95
Table 9.	Projection for Spending on Health Care in Constant Prices of 1995, Current Policy Scenario	96
Table 10.	Projection of Public Spending on Pensions, Health, Long-Term Care, Education, and Unemployment Benefits as Share of GDP.....	97
Table 11.	Defense Expenditures as Share of GDP.....	106
Table 12.	Abbreviations of the Countries Mentioned in this Thesis.	129

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

I would like to express my profound gratitude to Professor Donald Abenheim and Professor Robert E. Looney for their guidance, concern and mentoring efforts during the preparation of this thesis and my post graduate study in California.

Furthermore, I would like to express my gratitude to Colonel Hans-Eberhard Peters of the German Air Force for the fruitful discussion of this topic during the *Seminar in European Security Issues*, taught at the NSA Department of the U.S. Naval Postgraduate School during the Winter Quarter 2005.

This thesis is dedicated with heartfelt gratitude to Colonel (Ret) John Kraus for so many years of a wonderful friendship.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

A. IMPORTANCE

In 2003, the *San Diego Union Tribune* printed an article that raised the question, “NATO in the 21st Century: Defeated by Demography?” By using NATO as an example, the author illustrates the changes in the median age of its member countries and compares them to the trend of aging in developing countries. Among others, the author points out that during the last fifty years the median age increased from 31 to 36 years and will increase to 44 by the year 2050. Not taking the United States and Turkey into account, the median age will be 49. In contrast to NATO countries, the author says, the median age in the Middle East is under 19. With respect to security aspects he argues that, among the twenty-five youngest countries in the world, sixteen have had major conflicts during the last ten years. Among the twenty-five oldest countries, however, only Croatia faced a major conflict during that same period of time.¹

These observations were already recognized by the British government in 2001. It points out in the British Defence Policy that demography and social factors do not only influence military requirements like recruiting, but also affect “the security situation in a number of regions.” This in turn may lead to “increasing pressures for peace support, humanitarian assistance and disaster relief operations.”²

This quote, taken from the British Defence Policy of 2001, indicates that today the expression *security* cannot be defined only in terms of “Country X is an enemy and possesses the following military capabilities;” issues like non military threats emerging from “domestic internal sources of instability” have to be taken into account too.³ However, John J. Hamre, the president and CEO of the Center for Strategic and International Studies, emphasized at a conference on *Economic and Budgetary Impacts of*

¹ Craig Romm, “NATO in the 21st Century: Defeated by Demography?” *The San Diego Union Tribune*, October 4, 2002.

² British Ministry of Defence, *Defence Policy 2001*, 12 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

³ Myron Weiner and Sharon Stanton Russel, *Demography and National Security* (New York: Berghahn Books, 2001): 3.

Global Aging in March 2003 that “there is only a general body of theory that links demography and geostrategic power.”⁴ He continued explaining that the two classical approaches embrace in general terms the theories that “countries with large populations are more powerful than countries with small populations” and that the “second general area of theory of demography and political power concerns rising and declining population bases.” In other words, it is argued that countries with declining population bases are accompanied by a declining economic strength, too, and that this is an incentive for other countries to “expand into that space.” However, so Hamre argues, this theoretical body “depends critically” on the role that societal leaders take in shaping these trends in the “context of [...] social and economic policies.”⁵

Myron Weiner, the former Director of MIT’s Center for International Studies and Chair of the External Research Advising Committee of the UNHCR, already stressed this point in his book *Demography and National Security*. He argues on the one hand that scholars have incorporated arguments like “population growth [and] environmental degradation” but on the other hand that demographers have “largely ignored the topic of political demography.”⁶ Furthermore, he emphasizes that political scientists and international relations scholars have “seldom incorporated demographic considerations into their analysis of conflicts between states [...] or of how development within states shape international conflict.”⁷

He underlines this statement by further arguing that many scholars have “eschewed examining the relationship between demography and security.” In contrast, he writes, practitioners like militaries and security agencies do so.⁸

⁴ John Hamre, “The Geopolitical Implications of Global Ageing in the Industrialized Countries,” Remarks by John J. Hamre President and CEO Center for Strategic and International Studies at a conference on The Economic and Budgetary Impacts of Global Ageing 4 March 2003 Brussels – Belgium: 1, <http://www.csis.org/gai/brussels/hamre.pdf> (accessed 6 November 2004).

⁵ *Ibid.*, 1.

⁶ Myron Weiner and Sharon Stanton Russel, *Demography and National Security* (New York: Berghahn Books, 2001): 4.

⁷ *Ibid.*, 5.

⁸ *Ibid.*, 5.

This requirement, to link demographic and security issues, was also already postulated by the Deputy Director of International Security Studies, CSIS⁹, Dan Gouré, at the CSIS Policy Summit on Global Aging in January 2000, and in November 2000 this issue was addressed by RAND during a “Demography and Security” workshop in Paris, France.¹⁰

As already mentioned at the start, Great Britain formulated in its defense policy for the first time in 2001 the need to regard demographic developments in respect to national security issues. Their policy points out not only that demography and social factors do influence military requirements like recruiting, but also that demographic trends affect “the security situation in a number of regions.” This in turn may lead to “increasing pressures for peace support, humanitarian assistance and disaster relief operations.”¹¹ In comparison to the formulation of the British Defence Policy, the German Defense Policy Guideline of 2003 addresses the impact of demographic factors on the national and European defense policy rather more indirectly as “unresolved political, ethnic, religious, economic and social conflicts combined with international terrorism, organized crime on an international scale and increasing migratory movements.”¹²

In contrast to the military side, the Enquête-Commission “Demographic Changes” of the German parliament does not even address security problems in its report, but covers only social aspects and integration issues of immigrants.¹³

However, demographic developments do not only affect national and European security but also future developments of societal capabilities. Whereas the developing countries have high birth rates, the societies of developed countries are aging rapidly. In

⁹ CSIS - Center for Strategic and International Studies.

¹⁰ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000), <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

¹¹ British Ministry of Defence, *Defence Policy 2001*, 12 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

¹² Bundesministerium der Verteidigung, *Defence policy Guidelines for the area of responsibility of the Federal Minister of Defence*, Berlin, 21 May 2003: 6-7.

¹³ Deutscher Bundestag, Schlussbericht der Enquête-Kommission, „*Demographischer Wandel – Herausforderungen unserer älter werdenden Gesellschaft an den Einzelnen und die Politik*“ 14. Wahlperiode, Bundesdrucksache 14/8800, 28 March 2002.

combination with a higher life expectancy, this leads in sum to two effects working in opposite directions. The workforce and therefore the GDP will decline, but the age dependency ratio will increase and with it spending for social welfare in particular.

Due to this development the funding of military budget will be under strong pressure. Furthermore, European militaries have to compete with industry to recruit highly skilled and motivated personnel. Moreover, the armed forces of the European nations are presently undergoing a transformation process to meet the requirements of the Defense Capability Initiative of NATO or of the European Security and Defense Policy (ESDP) of the EU. This transformation process, however, effecting equipment, technology, training, and organization issues, collides and will collide with social requirements as the budgetary possibilities become tighter and tighter in the future.

In order to get the most effective armed forces with respect to the budgetary constraints, this thesis argues that the European integration has to be fostered further and deepened. Europe has to enhance its effort to integrate and transform national into European armed forces to compensate for demographic difficulties that lie ahead.

B. HYPOTHESIS AND RESEARCH QUESTION

Since 1990 the European countries have paid the peace dividend and reduced their troops tremendously. On the other hand, a new threat environment in the immediate proximity of Europe, namely in the Mahgreb countries and in the Middle East has emerged that, among others, can be explained by demographic trends. These trends, however, develop in the opposite direction that the demographic trends in European countries do. So consequently, because of the shrinking European societies and the new threat perception, the European armed forces must be transformed into highly mobile, light, and highly engineered forces. On the other hand, the demographic development of European countries will lead a tremendous increase of social welfare expenditures which will further foster their reluctance to increase military budgets.

While contrasting this tension between social necessities and military requirements, this thesis contributes to answering questions concerning Europe's possible reactions and policy options. The central questions are discussed in the following order:

- What are the key variables that describe the growth and decline of the population?
- What are the global demographic trends?
- How do these global trends affect European security and which region is the most likely threat to European security?
- How is the European economy effected by demographic trends?
- How does the demographic development in Europe influence social welfare spending on health care, pensions, education, unemployment, and public debt?
- Taking the threat assessment and economic development into account, how is the development of European armed forces influenced in respect to subjects like military budgets?
- What possible measures have to be applied in order to extenuate the demographic trends?

C. METHODOLOGY AND SOURCES

To narrow this broad topic, the analysis concentrates on four select countries, France, Germany, Great Britain, and Italy, to represent the demographic development of Europe. These four are the largest and their demographic problems are the most urgent. In regard to the ongoing military transformation process, European forces are supposed to be deployed worldwide. Furthermore, only countries in the nearer geographic vicinity of Europe are considered in this analysis. With respect to European security issues, only the countries of the Middle East and the Mahgreb are considered.

Dependant on the availability of data, the projected scenarios range from 1950 through 2040-2050. This time-range is chosen because demographers assume that the demographic transition process in most of the countries will have been completed within that period.¹⁴

¹⁴ Richard Jackson and Neil Howe, *The 2003 Aging Vulnerability Index: An Assessment of the Capacity of Twelve Developed Countries to Meet the Aging Challenges*, (Washington, DC: CSIS, 2003): 4, www.csis.org/gai/aging_index.pdf (accessed 6 November 2004).

First, this thesis explores the key demographic variables and trends globally; and it then focuses on Europe in order to clarify the different demographic developments. In the next step, the trends are discussed in respect to their strategic implications for European national security. In the light of those implications I analyze the impact on economics caused by demographic trends. In particular the relation between workforce, birth rate, and retirement is discussed. And in the light of that discussion I calculate appraisals of the future GDP and budgets for military and social issues respectively. In order to demonstrate the tension between social and military budgets in Europe, the next section examines the impact of a declining society on the social welfare system. In the section discussing military budgets, the budgets are assumed to represent a certain fraction of the GDP, whereas the share of military investments is expressed as a certain percentage of the military budget. Finally, I discuss the goals of the European Security Strategy within the framework of the fiscal possibilities, recruitment, drafting, equipment, technology, training and organization. Based on those results and constraints, the further development of European armed forces is rendered a subject of prediction.

To support my argument, I draw on research in various books, papers, and articles, dealing with these issues. To predict future development, I also use reports, statistics, and other data from many U.S. and European organizations (CSIS, EU, IISS, IMF, NATO, OECD, PAI, RAND, SIPRI, UN, and UNESCO). The graphs presented in this thesis, compiled by the author, are based on raw data presented by those organizations. To project future economic growth, I set up my extrapolation on data derived from economic growth trends in the past. To take into account the impact of future demographic developments, I considered appropriate data calculated by the European Policy Committee in my projections. In the case graphs developed and published by other authors are used by me in modified form, this will be explicitly noted.

D. ORGANIZATION OF THE THESIS

The introduction in Chapter I outlines the importance of this topic and develops the hypothesis and the research question. The methodology and sources used are also described. For a better understanding, Chapter II introduces and defines special

demographic terms used in the thesis. Chapter III then describes the relationship between a former historical understanding of national power and demographic development. The appropriate key demographic variables, which are fertility, mortality, and migration, are discussed in more detail in Chapter IV. In the subsequent chapter the key variables are used to develop demographic trends. Here, issues such as aging versus youth bulge, and urbanization and urban growth, are emphasized. The chapter focuses on possible implications of the presented demographic trends for future conflict, and illustrates the changes in sources of national power, in sources of conflict, and in the nature of conflict.

Having outlined basic demographic developments and their implication for security issues, Chapter VI describes the shift in European and NATO security perceptions caused by political developments since the end of the Cold War. In addition, Chapter VI presents the need for reforms and the adaptation of the European military to the new emerging threat scenario. Following up on the findings of Chapter VI, Chapter VII discusses the tension between military requirements influenced by demographic developments in appropriate foreign countries on the one hand, and the social necessities caused by the demographic development in European countries on the other hand. Furthermore Chapter VII describes the demographic influence on the economic development in Europe and on the social system to demonstrate that, due to the necessary increase of social welfare spending, there is hardly any leeway available to increase military budgets. Then it discusses the European defense efforts under those financial and socio-political constraints. Chapter VIII introduces the present ongoing reform and transformation process to show that improvements are presently being achieved by internal optimization. In case, these internal improvements are exhausted and come to an end, however, different policy options must be taken into account. Those are discussed in the second part of Chapter VIII. Chapter XI summarizes the main findings and concludes that, to get the most effective armed forces with respect to the budgetary constraints, European integration must be further fostered and deepened. Furthermore, this thesis concludes that Europe must enhance its effort to integrate and transform national forces into European armed forces to compensate for demographic difficulties that lie ahead.

THIS PAGE INTENTIONALLY LEFT BLANK

II. DEFINITIONS

Most of the definitions in this chapter are from the United Nations Population Division glossary.¹⁵ Those that are not are so indicated.

Crude birth rate:	Number of births over a given period divided by the person-years lived by the population over that period. It is expressed as number of births per 1,000 population.
Crude death rate:	Number of deaths over a given period divided by the person-years lived by the population over that period. It is expressed as number of deaths per 1,000 population.
Dependency ratio:	The <i>total dependency ratio</i> is the number of persons under age 15 plus persons aged 65 or older per hundred persons 15 to 64. It is the sum of the <i>youth dependency ratio</i> and the <i>old-age dependency ratio</i> . The <i>youth dependency ratio</i> is the number of persons 0 to 14 years per hundred persons 15 to 64 years. The <i>old-age dependency ratio</i> is the number of persons 65 years and over per one hundred persons 15 to 64 years.
Health expenditure:	Total expenditure (on health and long-term care) includes: services of curative care (HC1); services of rehabilitative care (HC2); services of long-term nursing care (HC3); ancillary services to health care (HC4); medical goods dispensed to outpatients (HC5); prevention and public health services (HC6); and health administration and health insurance (HC7), plus investment in medical facilities. ¹⁶

¹⁵ United Nations Population Division, <http://esa.un.org/unpp/Glossary.html> (accessed 1 January 2005).

¹⁶ OECD System of Health Accounts, <http://www.oecd.org/dataoecd/49/51/21160591.pdf> (accessed 30 April 2005).

Rate of natural increase:	Crude birth rate minus the crude death rate. Represents the portion, determined exclusively by births and deaths.
School life expectancy:	Number of years a child is expected to remain at school or university, including years spent on repetition. It is the sum of the age specific enrolment ratios for primary, secondary, post-secondary, non-tertiary and tertiary education. ¹⁷
Total fertility rate:	The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.
Young adults:	Number of persons 15 to 29 years per hundred persons 15 years and over. ¹⁸

¹⁷ UNESCO, "Global Monitoring Report 2003/2004," http://portal.unesco.org/education/en/ev.php-URL_ID=24188&URL_DO=DO_TOPIC&URL_SECTION=201.html (accessed 6 January 2005).

¹⁸ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 89.

III. POPULATION AND NATIONAL POWER IN HISTORY

Looking back in European history, the size of population was one factor that contributed to the rise and fall of national power, politically, militarily, and economically. Rapid population growth and differential growth rates led to migration, changes in political systems, interstate tensions, and conflicts.¹⁹

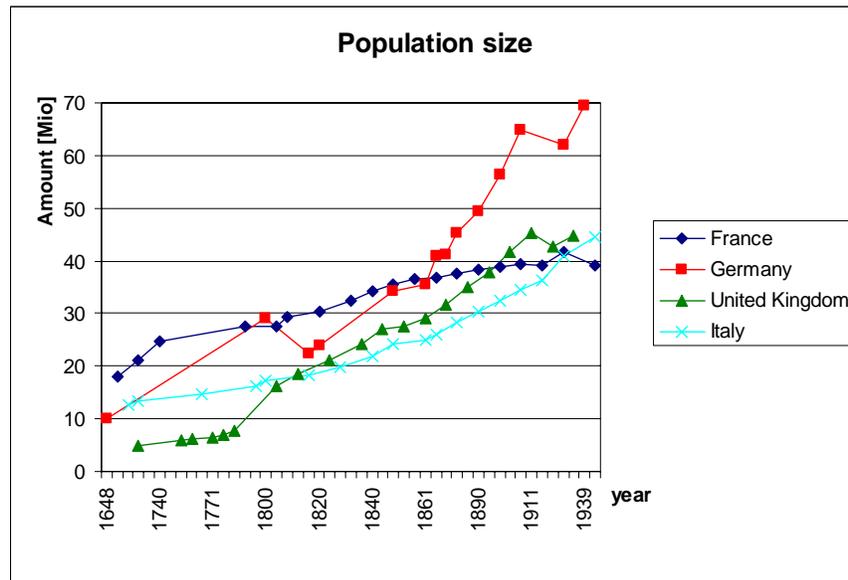


Figure 1. Population history of selected European countries

From the middle of the 17th century on, until the end of the Napoleonic Wars, France was the biggest power in Europe. During this period its population numbered 20 million, which was two times more than that of the Holy Roman Empire, three times more than England and Scotland together, and four times more than the population of Spain.²⁰ Almost a hundred years later, Europe was hit by a population explosion. Europe had counted 130 million inhabitants, but by approximately in 1800 the population

¹⁹ Civil Intelligence Agency, *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, July 2001: 12-17, <http://www.eldis.org/static/doc9390.htm> (accessed 6 November 2004).

²⁰ Hagen Schulz, *States, Nations and Nationalism*, (Malden, MA: Blackwell Publishers, 2002): 52.

had increased to 266 million.²¹ At the beginning of the French Revolution the population of France numbered approximately 28 million with a ratio of youth to adults ($\sum n_{\leq 18} / \sum n_{> 18}$) of 0.8.²²

However, the industrial revolution had not yet taken place in France on the same scale as in Great Britain, so agriculture still relied on manpower. Despite new agricultural methods like superseding the three-field system of cultivation, it was hard to align food production with the growth in population. In contrast to Great Britain, France often experienced bad harvests that resulted in “disettes” (famines), as in 1788, 1812, 1817, and 1846-47.²³ Due to underdeveloped markets and insufficient transportation systems, regional shortages in food supply could not be compensated for and the population had to fall back on its reserves. In 1788, because of the unleash of grain prices, the price for bread was almost 80% of the family income. With the outburst of the French revolution on 14 July 1789 the bread prices reached the highest level of the century.²⁴ In this light of these factors, I argue that the French Revolution was a result not only of the influence of industrialization and the Enlightenment, but also of demographic development in France.

Although Napoleon was able to recruit an army from this society large enough to conquer almost all of Europe, for some reason, the birth rate in France declined with the beginning of the 19th century, long before improvements in living standards and health could influence the rate of mortality and compensate for the declining birth rates. Consequently, France “fell behind in the race of population” and was surpassed by

²¹ Hagen Schulz, *States, Nations and Nationalism*, (Malden, MA: Blackwell Publishers, 2002): 138.

²² Civil Intelligence Agency, *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, July 2001: 13, <http://www.eldis.org/static/doc9390.htm> (accessed 6 November 2004).

²³ Eugen Weber, *Peasants into Frenchmen: The Modernization of Rural France, 1870-1914* (Stanford, CA: Stanford University Press, 2002), 17.

²⁴ Christopf Bühler, „Die Französische Revolution,“ <http://www.zum.de/Faecher/G/BW/neuzeit/frzrev/fr2.htm> (accessed 31 December 2004).

Prussia and Great Britain.²⁵ From the French perspective, it was this demographic decline that was responsible for the lack of national power and for France's defeat in 1870/71 and 1940.²⁶

The French historian and demographer Alfred Sauvy (1898-1990) commented on this situation in 1962:

The difference between France and other countries, this drying up of the sap at the moment of great expansion, is the most important fact of all her history; it has determined all subsequent development and is still in action today.²⁷

However, even during the age of the French Third Republic (1871-1940), French intellectuals and officials had already realized this situation, which finally led to strong pronatalist feelings which were combined with a strong sense of nationhood.²⁸ Nevertheless, the French population could not be convinced that France was endangered by the poor demographic development. Although this situation was already perceived in 1870 by conservatives as having a negative and dangerous impact on the security of France, the socialist and liberal representatives in the National Assembly prevented pronatalist bills from passing until the 1930s. In 1920, the French Prime Minister Clémenceau reacted to this crisis by stating: "France is lost, as soon no French people will exist anymore."²⁹ It took the French defeat in 1940 to convince members of all parties that an increase of fertility was of vital importance for the existence of France.³⁰ Thus, Marshall Pétain explained the reasons for the French defeat during a radio speech on June 17, 1940, with the following words:

²⁵ C. Alison McIntosh, "Low Fertility and Liberal Democracy in Western Europe," *Population and Development Review*, Vol. 7, No. 2 (1981): 183.

²⁶ *Ibid.*, 183.

²⁷ *Ibid.*, 184.

²⁸ *Ibid.*, 184

²⁹ Michael Mönninger, "Demographie als Volkssport," *Die Zeit*, 10/2004.

³⁰ C. Alison McIntosh, "Low Fertility and Liberal Democracy in Western Europe," *Population and Development Review*, Vol. 7, No. 2 (1981): 195.

Trop peu d'enfants, trop peu d'armes, trop peu d'alliés: voilà notre défaite.(too few children, too few weapons, too few allies: That has brought about our defeat.)³¹

In 1945, Charles de Gaulles also made a plea for higher birth rates, stating: "France needs 12 million babies."³²

As a result of these demographic experiences, in 1945, France finally founded a government-based demographic research institute, the Institut National d'Études Démographiques (INED) and initiated a generous family finance policy.

In the last third of the 19th century, the population in Great Britain began to grow very rapidly. Thus, with respect to the expense for daily living, the British had the same experience as the French. The price of wheat increased, for example, during the fifteen years after 1789, by approximately 220%.³³ However, in contrast to France, this development did not contribute to a revolution, but instead helped to foster the process of industrialization and was eased by emigration to the American colonies.

For almost 150 years Great Britain and France lived in a continuous state of war.³⁴ Triggered by a concern that Britain's population growth could not compete with that of France, and living in fear from the steady threat of a French invasion, social welfare became vital for Great Britain.

A cult of prolific maternity was immensely attractive [...] to those who believed that Britain's population was in decline, and to those who simply wanted more live births so that the nation might better compete in terms of cannon-fodder with France.³⁵

Triggered by these concerns, a "spate of maternity hospitals" were established by the middle of the 18th century. Women were encouraged to raise their toddlers by breast-

³¹ Michael Mönninger, "Demographie als Volkssport," *Die Zeit*, 10/2004.

³² Ibid.

³³ Linda Colley, *Britons: Forging the Nation 1707-1837* (New Haven: Yale University Press, 1992): 158.

³⁴ 1689-1687 Nine Years War, 1702-1713 War of Spanish Succession, 1739-1748 War of Austrian Succession, 1756-1763 Seven Years War, 1793-1802 French Revolutionary War, 1803-1815 Napoleonic Wars.

³⁵ Linda Colley, *Britons: Forging the Nation 1707-1837* (New Haven: Yale University Press, 1992): 240.

feeding instead of wet-nursing. Foundlings and orphans were rescued, raised, and educated in facilities such as the Marine Society, whose motto was: “For the Service of our Country.”³⁶ Even the former Prince of Wales patronized an organization in London, called the “Lying-in Charity for Married Women at their own Habitations,” under the motto “Increase of Children a Nation’s Strength.”³⁷

Whereas France and Great Britain were already or were on their way to becoming nations, in 1815, Germany was still a fragmented state. Even after having fought in the Grande Coalition against Napoleon, it was not in the interest of France, Great Britain, Russia, and Austria to agree to a unified Germany. They feared that Germany might become too powerful and interfere in the balance of power between these other four countries. From their perspective, the German territory could be used as a political and geographical buffer zone. At this time, the German population was already approximately 22 million, equal to 73% of the population of France, 110% of the British population, 50% of that of Russia, and 74% of that of Austria-Hungary.³⁸ So, on one hand, the results of the Congress of Vienna can be seen as an attempt of the crowned heads of Europe to reinstall the conditions of the pre-revolutionary era. However, taking into account the demographic situation at the time, the Congress of Vienna can also be seen as an example of international relations in which the size of population contributed to political decisions.

Although the German population was still much smaller at the beginning of the 19th century (compare Figure 1), it continued to grow steadily. But since the beginning of the age of industrialization in Germany, approximately in the 1860s, the German population growth started to explode and outnumbered the French population by 30 million in 1939. Whereas in France pronatalist policies were mainly driven by the fear of German dominance, the prenatalist German policy had been motivated by the national-socialist ideology since 1933. So, one of the main issues that dominated the Nazi-

³⁶ Linda Colley, *Britons: Forging the Nation 1707-1837* (New Haven: Yale University Press, 1992): 98, 240.

³⁷ *Ibid.*, 240.

³⁸ Data were compiled by data given in Örjan Martinsson, “Population history,” *Historical Atlas*, <http://www.tacitus.nu/historical-atlas/population/centraleurope.htm> (accessed 1. January 2005).

German population policy was a belief in a superior Aryan race.³⁹ This basic idea of a superior race linking population and national power was not new. In 1877, the British businessman Cecil Rhodes (1853-1902), founder of Rhodesia (now Zimbabwe) exclaimed an extreme position in a memorandum:

I claim that we are the leading race in the world, and the more of the world we populate, the better it will be for mankind.... Since [God] has obviously made the English-speaking race the chosen instrument by which He means to produce a state of society based on justice, freedom and peace, then it is bound to be in keeping with His will if I do everything in my power to provide that race with as much scope and power as possible. I think that, if there is a God, then He would like to see me do one thing, that is, to colour as much of the map of Africa British red as possible.⁴⁰

Nonetheless, it was Nazi-Germany that developed this ideology in a population policy to an extreme that led from violence to murder and finally to genocide. So, in the era of the Third Reich the goal of its racially motivated population policy was to increase the number of “Aryans,” as they were seen as superior to other people, while at the same time a distinction of the “racially impure” was justified.⁴¹ Furthermore, the National Socialist leadership derived from its belief in a “leading race” the justification to oppress “non-Aryan nations” and to conquer “living space in the East.”⁴²

A second issue that was embodied in the National Socialist pronatalist policy, and consequently linked to the Nazi-Germany’s overall goal, was the placing of the “common need before the individual need.”⁴³ Thus, women during the period of the Third Reich “enjoyed a nominally protected but thoroughly subordinate status as the present or future mothers of the race.”⁴⁴ Hence, in order to achieve the goal of increasing birth rates, the National Socialist leadership offered different incentives to young couples, such as

³⁹ C. Alison McIntosh, “Low Fertility and Liberal Democracy in Western Europe,” *Population and Development Review*, Vol. 7, No. 2 (1981): 184.

⁴⁰ Hagen Schulze, *States, Nations and Nationalism*, (Malden, MA: Blackwell Publishers, 2002): 256.

⁴¹ C. Alison McIntosh, “Low Fertility and Liberal Democracy in Western Europe,” *Population and Development Review*, Vol. 7, No. 2 (1981): 184.

⁴² *Ibid.*, 184.

⁴³ Stanley G. Payne, *A History of Fascism 1914-1945*, (Madison, WI: The University of Wisconsin Press, 1995), 194.

⁴⁴ *Ibid.*, 195.

economic benefits and marriage loans.⁴⁵ Consequently, the live birth rates increased from 971,000 in 1933 to 1.4 million in 1939.⁴⁶

Having outlined the demographic development of major European players from a historic perspective, I argue that until the end of World War II the national power of European nation-states was directly linked to their demographic development and that their pronatal policies were justified by a fear of being overwhelmed by another nation.

Although Europe experienced a baby boom after World War II, an opposite development emerged shortly after: namely birth rates started to decline again and, combined with a higher life expectancy, European societies began to shrink. Hence, in the following chapter I introduce and discuss key demographic variables: fertility, mortality, and migration.

⁴⁵ Stanley G. Payne, *A History of Fascism 1914-1945*, (Madison, WI: The University of Wisconsin Press, 1995), 195.

⁴⁶ *Ibid.*, 195.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. KEY DEMOGRAPHIC VARIABLES

As shown by the historical examples in the previous chapter, the size of its population was seen as a major link to a nation's power and, therefore, influenced national policies. However, with the beginning of the Second World War and the end of the Balance of Power policy, it became obvious that other variables also contributed to national power. Among others, political, military, and economic alliances, economic and technological development, education and the stability of political systems can be named.⁴⁷ But, taking the present global demographic development into account, it is questionable, whether these variables compensate for a lack of manpower in the long run. The following section gives a short description of three key variables – fertility, mortality, and emigration – that are responsible for either the growth or the decline of population size.

A. FERTILITY

In order to describe demographic changes and their causes in societies, in 1944 F.W. Notestein published his work *The Future Population of Europe and the Soviet Union* on behalf of the League of Nations. Based on his findings, the Office of Population Research in Princeton, N.J. formulated the “demographic transition” theory.⁴⁸ The theory states that if a society is subject to a process of modernization, it will transform from a level of high fertility and mortality to a level where both are low. Although this theory was improved over time, especially by explanations of the theory's causal context, its main weakness still remains. Explanations based on socio-economic, economic, institutional, or cultural reasons cannot yet determine the time and speed of population transformation.⁴⁹ However, according to Dudley Kirk, although no two

⁴⁷ C. Alison McIntosh and Barbara B. Crane, “Population Decline: A Threat to the West?” *Family Planning Perspectives*, Vol. 18, No. 5 (1986): 235.

⁴⁸ Dudley Kirk, “Demographic Transition Theory,” *Population Studies*, Vol. 50, No. 3 (1996): 363.

⁴⁹ *Ibid.*, 386.

countries were subject to the same transformation trajectory due to too many combinations of the determining variables fertility, mortality, and migration, the theory holds in general.⁵⁰

Applying these findings to industrialized, industrializing, or developing countries, it is noticeable that industrialized countries not only went through a transformation process caused by modernization, but also through a second demographic transformation after 1960 as birth rates again started to drop.

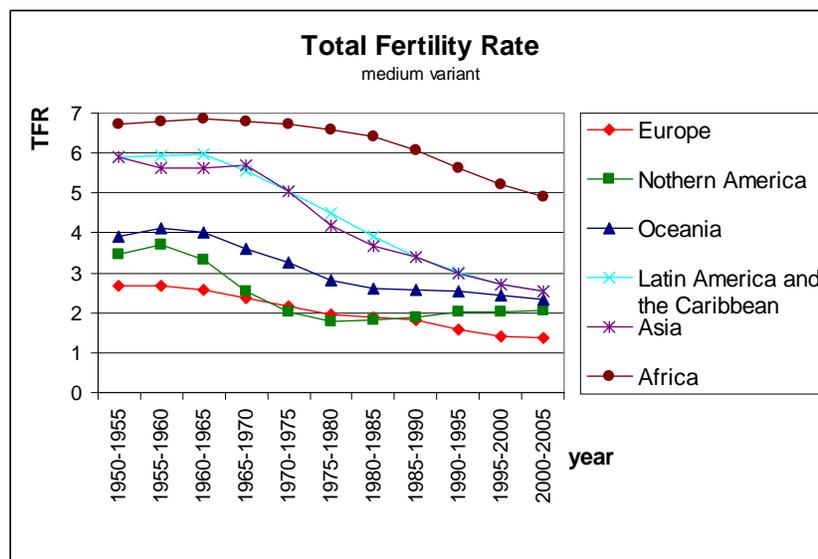


Figure 2. Regional Total Fertility Rate

So since 1960, the population pyramid has changed from a bell shape to a more inverted one. Although a total fertility rate of 2.1 is needed to replace a society without shrinkage, in many countries the total fertility rate dropped below this level.⁵¹

⁵⁰ Dudley Kirk, "Demographic Transition Theory," *Population Studies*, Vol. 50, No. 3 (1996): 386.

⁵¹ Josef Schmid, "Population Aging: Dynamics, and Social and Economic Implications at Family, Community and Societal Levels," *Otto-Friedrich-Universität Bamberg Bevölkerungswissenschaft Bamberg, Germany*, CES/PAU/1998/6, (21 October 1998): 3, <http://www.un.org/popin/regional/europe> (accessed 6 November 2004).

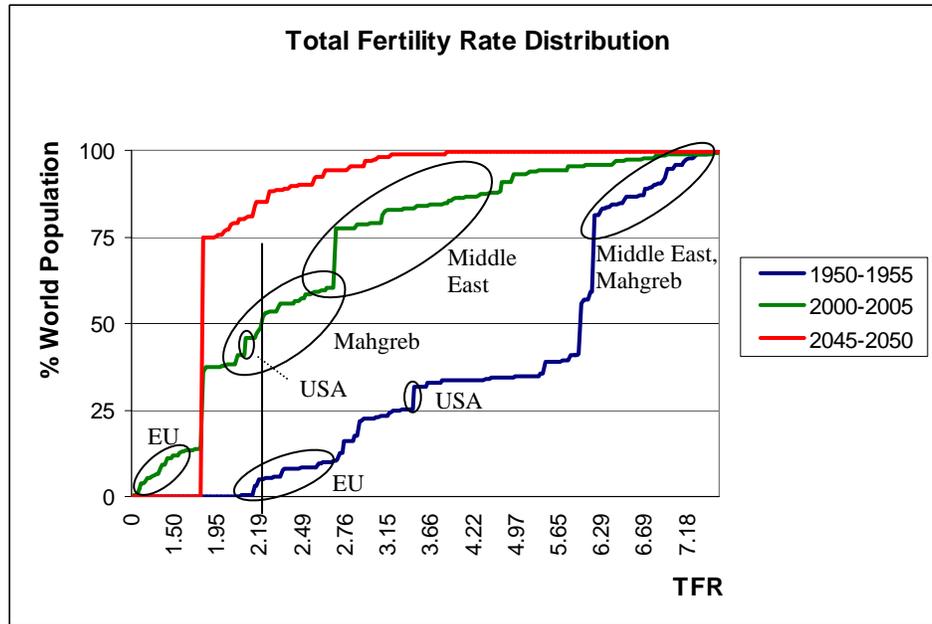


Figure 3. Total Fertility Rate Distribution

(After) Chris Wilson and Gilles Pison, "More than half of the global population lives where fertility is below the replacement level."

Looking back at the last fifty years, we find that the median fertility rate was still at a level of approximately six births per woman. Since then, the rate has been dropping dramatically, with the result that anytime in 2003 and 2004 50 percent of the world's population was now in countries whose total fertility rate was less or equal to 2.1.⁵²

Furthermore, Figure 3 illustrates a dramatic drop in the total fertility rate of the countries of the Mahgreb and the Middle East. There the fertility rates dropped by 65 percent and 50 percent respectively over the last fifty years. In contrast to European countries, their fertility rate is still well above the inter-generational replacement rate. In other words, whereas the European societies are aging and shrinking, the populations of the Mahgreb and the Middle East are aging but still growing.

Although within the framework of the demographic transition theory the decline of the total fertility rate cannot be explained with respect to timing and speed in terms of the socio-economy, economy, or culture, there are indicators that correlate with this

⁵² Chris Wilson and Gilles Pison, "More than half of the global population lives where fertility is below the replacement level," *Population and Societies*, No. 405 (October 2004): 1-2.

decline. One possible explanation is the relation between the declining fertility rate and the increasing education and participation of women in the labor force.⁵³

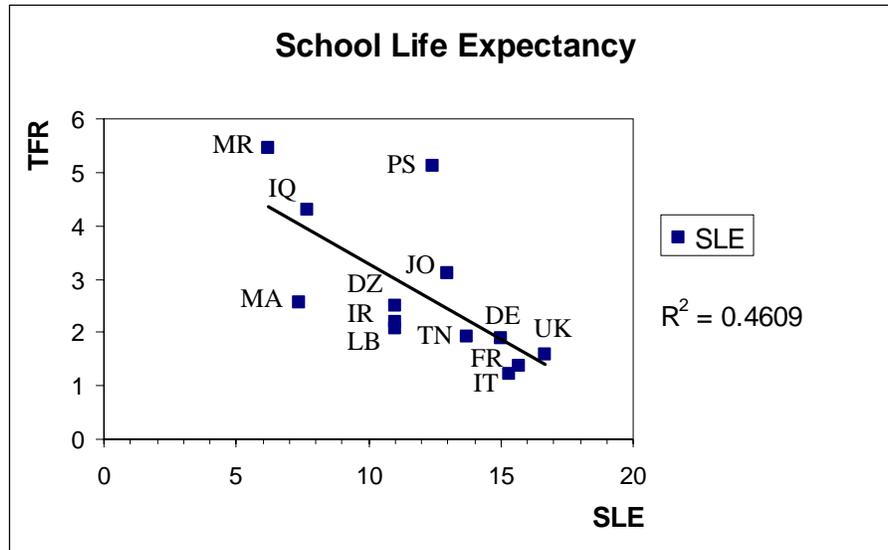


Figure 4. School Life Expectancy

To find some evidence for the above correlation assumptions, I plotted data, as available, for select European, Middle East, and Mahgreb countries. To explore the correlation between the total fertility rate and education, I used data representing the number of years a girl is expected to remain at school or university, including years spent on repetition. As shown in Figure 4, two trends exist. First, the more developed a country is, the lower its total fertility rate. Second, the deviation from the trend line decreases with an increasing status of development.

⁵³ OSCE, *Demographic changes in the OSCE Region: Challenges and Responses (Selected aspects)*, (Vienna: Office of the Coordinator of OSCE Economic and Environmental Activities, 20 October 2004): 6, http://www.osce.si/docs/2004-11-08-trst-%208.in%209.11.2004%20-%203743_en.pdf.

The same method was used to show the relation with respect to the share of women in the labor force.

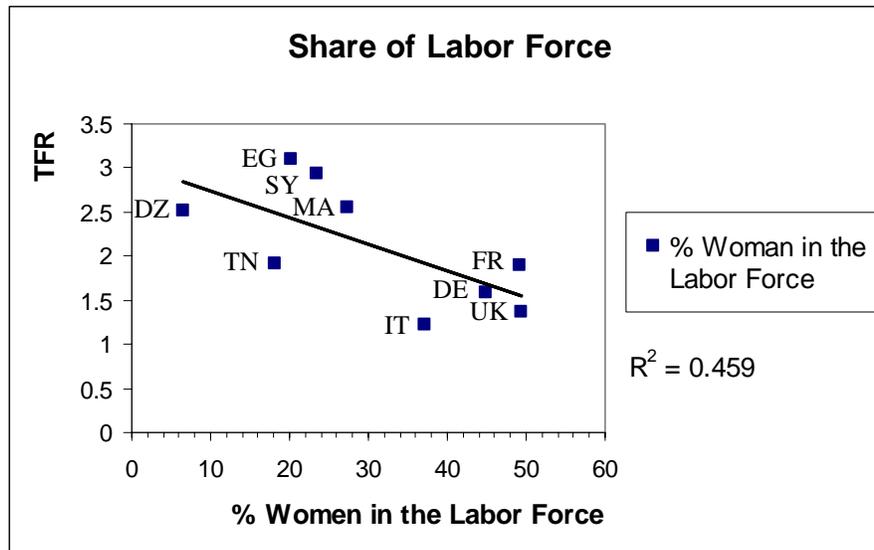


Figure 5. Share of Women in the Labor Force

Here too, there is a strong correlation. However, in contrast to the school-life expectancy, there is a much clearer separation between the developed and developing/transition countries respectively. Thus, although the educational conditions for women are improving in these regions, their share in the labor force is still small.

Other reasons for declining birth rates are increasingly better health conditions which lead to an increasing life expectancy respectively, and the establishment of social welfare systems. So the need for so-called “insurance births” practiced in former times is diminished. Instead, the family ties are loosening and the desire for children is “counterbalanced by the maintenance of a rather individualistic welfare optimum.”⁵⁴

⁵⁴ Josef Schmid, “Population Aging: Dynamics, and Social and Economic Implications at Family, Community and Societal Levels,” *Otto-Friedrich-Universität Bamberg Bevölkerungswissenschaft Bamberg, Germany*, CES/PAU/1998/6, (21 October 1998): 5-6, <http://www.un.org/popin/regional/europe> (accessed 6 November 2004).

B. MORTALITY

Within the framework of demographic explorations, mortality is closely linked to fertility. Together, these two variables determine the natural growth or decline of a population (crude birth rate minus crude death rate). Compared to declining fertility rates, it is much easier to explain the trend of mortality and its possible causes.

One cause was the establishment of stable institutions in the late 18th and the first half of the 19th century and the development of the modern state in Western Europe. Within that context among others, agricultural production methods and transportation technology were improved. The fear of probable famines disappeared, as supply shortages were compensated supra regionally. With the end of the German-French war in 1871, a second long-lasting period of peace began in Western Europe. Thus the absence of wars or conflicts also contributed to the reduction of mortality.⁵⁵

During the last third of the 19th century, progress was not only achieved in technological fields, but also in medicine, which was greatly improved by some revolutionary discoveries. The findings of Pasteur and Koch, for example, in the field of hygiene had a direct influence on the mortality rate. The infant and maternal death rates were reduced, and deaths caused by diseases such as tuberculosis could be reduced by vaccinations. A further contribution to declining death rates was the ability by 1943 to mass produce penicillin.⁵⁶ In sum, the level of mortality rates relies to a great degree on the performance of the health care system and, therefore, on “public efforts and individual responsibility.”⁵⁷

C. MIGRATION

While the natural growth or decline of a society is determined by the equation *fertility rate minus mortality rate* and therefore is domestic-minded, a third key variable,

⁵⁵ Dudley Kirk, “Demographic Transition Theory,” *Population Studies*, Vol. 50, No. 3 (1996): 368.

⁵⁶ *Ibid.*, 368.

⁵⁷ Josef Schmid, “Population Aging: Dynamics, and Social and Economic Implications at Family, Community and Societal Levels,” *Otto-Friedrich-Universität Bamberg Bevölkerungswissenschaft Bamberg, Germany*, CES/PAU/1998/6, (21 October 1998): 3, <http://www.un.org/popin/regional/europe> (accessed 6 November 2004).

migration, is perhaps the most influential because of the effect, especially of foreign immigrants, on national security. In the following discussion of this variable, two aspects are considered. First, I consider the influence of domestic migration, that is, the movement of people within their own country from one region to another or from the countryside into towns. Second is the influence of migration from a foreign country, either by a forced mass migration due to conflict, civil war, interstate war, economic crisis, natural disaster or simply by an expectation of a better future in a foreign country, that is, migration due to economic motivation.

To demonstrate my argument, I explore the migration flows to Europe and within North Africa and the Middle East. See Figure 6 where the figures in parentheses specify two groups of uprooted people:

refugees who are unwilling or unable to return to their home countries because they fear persecution or armed conflict there and who lack a durable solution; and asylum seekers who are awaiting a refugee status determination.⁵⁸

Overall, three trends can be identified. First, the total rate of refugees and asylum seekers in Europe is 1.153 million, of which the four biggest countries, France, Germany, Great Britain, and Italy host almost 27 percent. Additionally, Germany already hosts legal immigrants who numbers 9 percent of Germany's total population. In comparison to the United States this is only 0.3 percent less. In France 6.3 percent and in Great Britain 3.6 percent of the population were born in foreign countries. Second, former colonial powers like Great Britain and France have to cope with a huge labor force from Morocco, Algeria, and Tunisia. In comparison, Germany and Austria host most of the Turkish foreign workers. Third, whereas the migration between Europe and North Africa occurs from mostly economic motivations, the situation is much different in the Middle East. Due to the conflicts in Palestine and Afghanistan, the appropriate neighboring countries have to cope with almost 4 million refugees.

When this situation is viewed with respect to security issues concerning Europe, it becomes obvious that European countries have to find solutions for a successful

⁵⁸ Grandmakers Concerned with Immigrants and Refugees (GCIR), Data as of 31 December 2000, <http://www.gcir.org> (accessed 14 January 2005).

management of their internal security. They must implement measures to successfully integrate foreigners and, due to the unstable situation in the Middle East and its implication for neighboring countries, and must increase pressures for peace support, humanitarian assistance and disaster relief operations.⁵⁹

Thus, due to the economically motivated North-South cleavage and the West-East cleavage dominated by the Middle East conflict, Europe's internal security and its external security are influenced simultaneously. The next section discusses the pros and cons of migration in more detail.

⁵⁹ British Ministry of Defence, *Defence Policy 2001*, 12 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

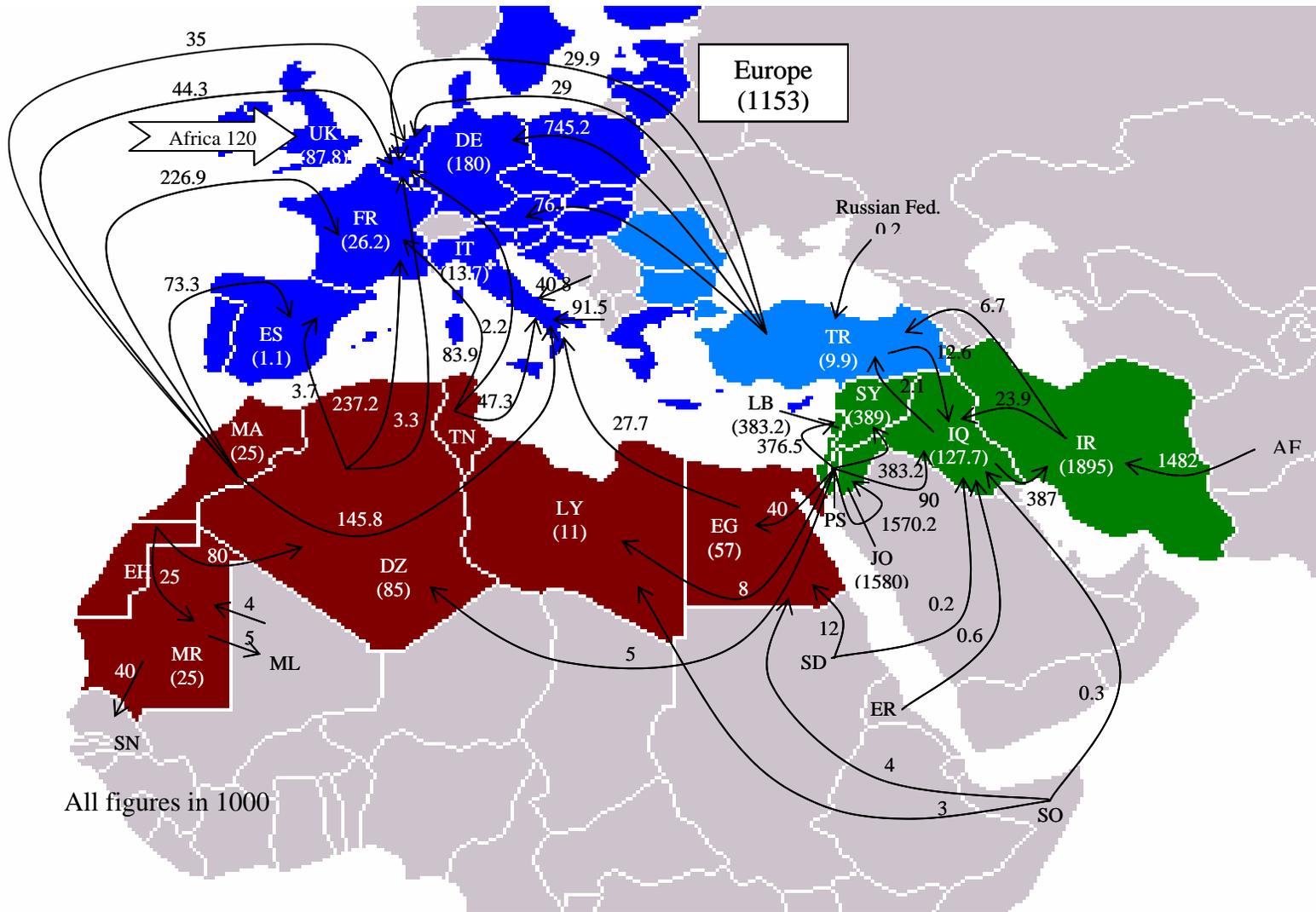


Figure 6. Migration in Europe, North Africa and the Middle East

1. Impact on the Receiving European Countries

Generally, both the sending and the receiving country, are affected with a push-and-pull effect.

The demographic situation in Europe can be regarded as a pull factor: the workforce will decline dramatically over the next thirty years; the dependency ratio will subsequently increase. Consequently, Europe must find for solutions that replace the missing workforce, if it is to keep the financial burden of the social welfare system within limits. John L. Helgerson, Chairman of the National Intelligence Council of the Denver World Affairs Council and the Better World Campaign, Denver, CO, stated in 2002 that since “EU needs some 1.7 million high-tech workers by 2003, many of them will have to come from outside the EU.”⁶⁰ With respect to this statement, it seems fair to assume that migration may be a solution. However, as positive as this idea may be, disadvantages also exist. As indicated above, Europe needs highly qualified workers. Most of the attracted people, however, are not as educated as desired and therefore work in jobs that can be easily vacated in case of economic problems. Low-educated immigrants are more threatened by unemployment than highly skilled ones. This in turn stresses the social welfare system, an effect meant to be avoided. On behalf of the German General Court, Prof. Herwig Birg examined the dependence effect of emigrants on the German social welfare system in terms of their length of stay.⁶¹ The results are not encouraging. Only a stay longer than 25 years contributes positively to the system, and according to Birg, the total balance is still negative.⁶²

So, in considering migration with respect to its socio-economic impact, a solution based on a restricted immigration policy and US-style green cards, as is presently being

⁶⁰ John L. Helgerson, “The National Security Implications of Global Demographic Change,” speech at the Denver World Affairs Council and the Better World Campaign in Denver, CO on April 30, 2002, http://www.cia.gov/nic/speeches_demochange.html.

⁶¹ Herwig Birk, “Auswirkungen und Kosten der Zuwanderung nach Deutschland: Gutachten im Auftrag des Bayerischen Staatsministeriums des Innern,” *Institut fuer Bevölkerungsforschung und Sozialpolitik der Universität Bielefeld*, (December 2001): 21.

⁶² Based on data from 1997, immigration rate into Germany of 216,000 per year (UN World population Prospect).

discussed in the EU, is not enough.⁶³ Rather, using bilateral agreements, European countries should consider investing not only in the education of their own population, but also by contributions to the education in foreign countries too.

Migration into Europe, however, has still more impacts. Immigrants tend to move into areas where diasporas of their nationality already exist. So, instead of being assimilated into their new environment, immigrants often retain strong bonds to their homeland. This situation, in combination with a high unemployment rate and lower social standards among immigrants, may lead to a higher rate of criminality and forcefulness.

Overall, this scenario raises high demands of the integration process of the receiving countries.

Once immigrants are established in a receiving country, this community serves as a “magnets for additional members of their national or ethnic group,” either for family reunification or for illegal immigrants.⁶⁴

As these problems are expected to be coped with domestically, there is another problem that has an even greater impact on European security: when migration flows start to “affect the ethnic composition of the host nation” and “a slower growing ethnic group may face a closing window of opportunities.”⁶⁵ This was the case for example, when the Muslim population started to outnumber that of the Serbs in the late 1960s and through the 1980s, which led to an economic, cultural, and political shift. Another example of the growing dominance of migration groups is Lebanon:

the Lebanese civil war of 1975-90 started when Shiite Muslim population growth threatened Maronite Christian control over Lebanon’s national political institutions.⁶⁶

⁶³ Lucia Kubosova, “EU considers US-style green cards for migrants,” <http://www.euobserver.com/?aid=18112> (accessed 13 January 2005).

⁶⁴ National Intelligence Council, *Growing Global Migration and Its Implications for the United States*, March 2001: 18.

⁶⁵ Civil Intelligence Agency, *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, July 2001: 48, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

⁶⁶ *Ibid.*, 49.

Although these are only two examples, they show that shifts in the composition of ethnic groups may have a great influence on European external security, as it may become necessary for European forces to intervene to provide peace support, humanitarian assistance, and disaster relief operations.

2. Impact on Sending Countries

A fast growing population, poverty, high unemployment rates, social tension, and political upheaval are some of the push factors that are incentives for young people to leave their home country. Although at first glance this effects the sending country negatively, because it loses industrious people and is drained of their small, highly educated elite, it has a positive effect for these countries as well.⁶⁷ Considering the appropriate numbers as illustrated in Figure 1, one can assume that migration may contribute to a certain relief of social and political pressure in the sending countries. When emigrants are settled in the target country, they often send money remittances in hard currency to their families to help ease their economic situation. When viewed from a political perspective, we find that returning emigrants sometimes have a chance to change the political situation in their home county. Thus, liberal ideas and different ways of living can be considered as driving factors. And due to modern information technologies, emigrants that leave their native countries due to political reasons, have the possibility to make their grievances public, which, in the best scenario, can lead to intervention by the international community.⁶⁸ Examples of this are the establishment of democratic rules in countries of Southern Europe, such as Spain during the 1970s and '80s; and, more recently, the discussion concerning human rights in Turkey, fuelled by their wish to be an aspirant country and to join the European Union in a few years. Although not directly political active in their country of choice, emigrants may nonetheless influence security issues in their host country or in others. This will also be

⁶⁷ National Intelligence Council, *Growing Global Migration and Its Implications for the United States*, NIE 2001-02D, March 2001: 22, http://www.cia.gov/nic/PDF_GIF_otherprod/migration.pdf (accessed 6 November 2004).

⁶⁸ *Ibid.*, 22.

the case if they support revolutionary, nationalistic, or terrorist groups in the countries of their origin, as is occurring at the moment in Iraq.

So far, I have discussed the influence of migration on foreign issues. However, migration within a country can be a previous step to emigration and may consequently influence the domestic socio-economic situation and domestic policies.

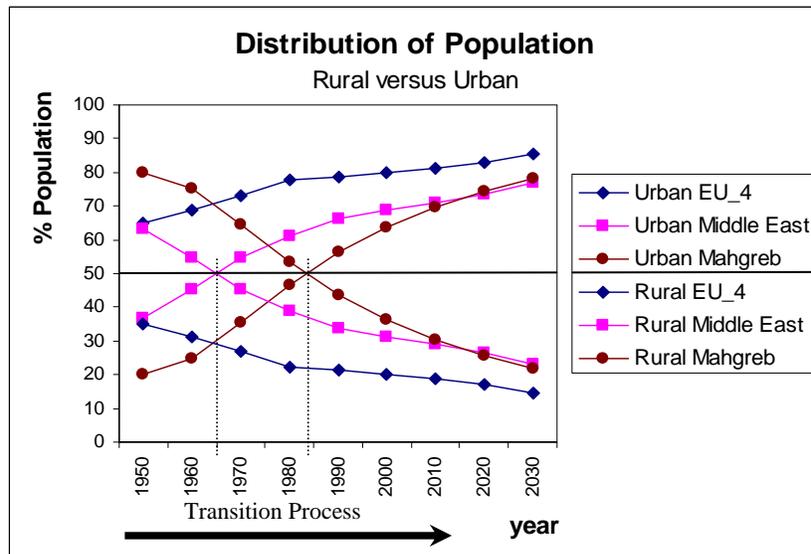


Figure 7. Distribution of Rural and Urban Population

Such movement is closely linked to the demographic stress factor, “urbanization.” As illustrated in Figure 2, more than 50 percent of the population in areas of interest is presently in urban areas. Furthermore, this graph demonstrates that with ongoing modernization, urbanization also moves on. Whereas Europe had already long passed this point, the countries in the Middle East only reached this point in the mid-1960s and the North African countries in the mid-1980s. It seems that, in the latter two regions, the process of urbanization is slowing down: the emigration rates from the countryside into cities are declining, and both trends are set to converge asymptotically after 2030. Especially in poorer countries, this trend will challenge communal governments in respect to city development with further challenges such as nourishment supply, water supply, and health care. And, as the rural population declines more and more,

consequently less agrarian production capacities will be available. Thus food stuffs will have to be imported, which will also stress the financial burden of these countries. Ultimately, violence caused by social unrest is a probable scenario.

V. STRATEGIC IMPLICATIONS OF DEMOGRAPHIC TRENDS

The previous chapters introduced and explained the key variables that determine the demographic development of societies. These determining factors are responsible for specific trends, such as aging, urban growth, and migration, which influence not only the size, distribution, and composition of a society, but also their economic performance and security. The trends and their implications for national security are described in this chapter.

A. AGING VERSUS YOUTH BULGE

1. General Development

Looking back in history, we find that the share of people older than 65 was no more than 2 percent or 3 percent of the total population.⁶⁹ Approximately 150 years ago, this situation started to gradually change and, finally populations increased dramatically in the mid-twentieth century.⁷⁰ But the question is, what causes the process of aging that some societies are presently entering? The driving force behind this trend is the mutual interference of falling fertility rates on the one hand and an increasing life expectancy on the other.

As long as birth rates are higher or at least equal to death rates, the population keeps growing or stagnating respectively. If, however, this ratio gets reversed, as is presently the case in developed countries, the society first starts to age and then to shrink. So, for example, in the four selected European countries, France, German, Italy, and Great Britain, as the rate of natural increase already peaked in the period between 1965-1970, it zeroed or will zero anytime between 2000 and 2005. The death rate will then become higher than the birth rate.

In comparison to Europe, this trend looks totally different in the selected countries of the Middle East and the Mahgreb. Whereas the rate of natural increase continued

⁶⁹ CSIS Commission on Global Aging, *Global Aging: The Challenge of the New Millennium*, 10 December 1999: 1, <http://www.csis.org/gai/GlobalAging.pdf> (accessed 6 November 2004).

⁷⁰ *Ibid.*, 2.

growing for an additional 30 years in the countries of the Middle East, the rate of natural increase stopped growing already in the 1970s in the Mahgreb countries, while still remaining at a level more than seven times higher than that in Europe. Not till the mid-1980s in both regions did the rate of natural increase started to decline. However, while the trend now is equal to that in Europe birth rates are and will remain significantly higher than the death rates.

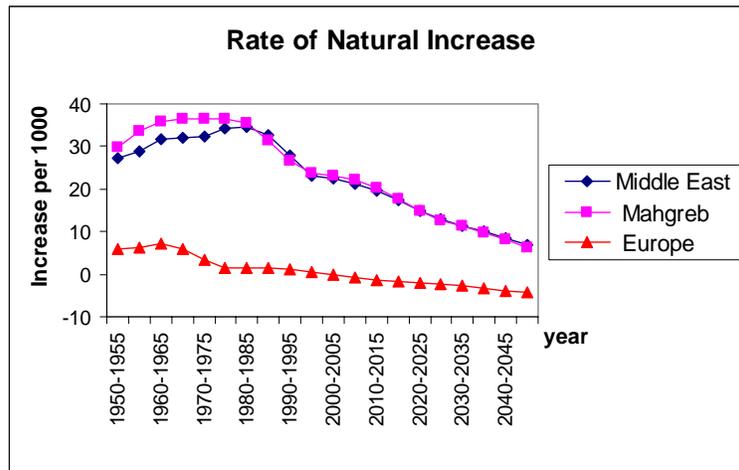


Figure 8. Rate of Natural Increase

Another phenomenon that has to be considered is the fact that, although the above mentioned parameter already declines, its influence affects the total size of the population with a certain time lag. For example, in Germany and Italy, this effect started in the 1970s as the population growth slowed down, stagnated, and finally started to drop sometime between 2000 and 2005. Only Great Britain and France still have growing populations with respect to 1950. In comparison to the European average, the situation is worst in Italy. Here the population growth started to decline in approximately 2000, and the gradient is already becoming steeper than in the other countries: that is, the Italian population is shrinking faster. Consequently, Italy's population will reach the level of 1950 sometime between 2040 and 2045.

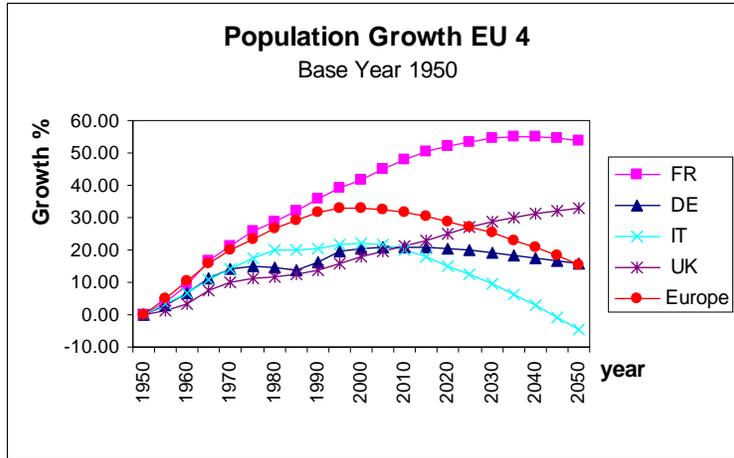


Figure 9. Population Growth in European Countries

Again, the trend in the Middle East and the Mahgreb is working in the opposite direction. As illustrated in Figure 10, these countries experienced an extremely high population growth during the last fifty years.

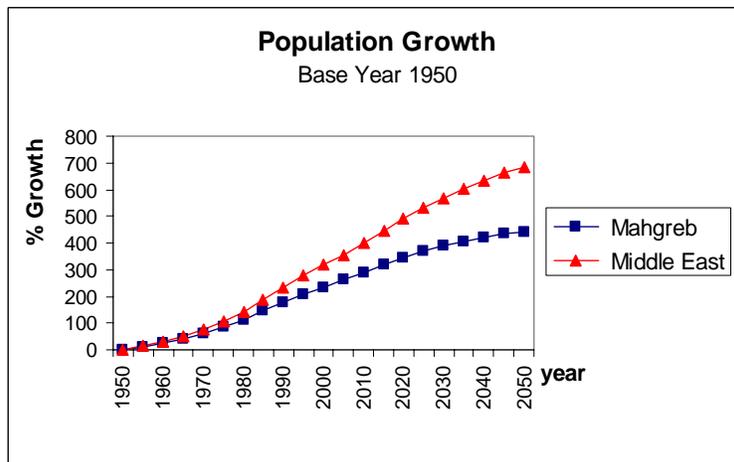


Figure 10. Population Growth in Developing Regions

The Mahgreb grew by approximately 250 percent and the population of the selected Middle East countries almost tripled. And this trend will continue into the

future. Not until 2050 this process will come to a halt. By then, the population of these regions will have grown by almost 450 percent and 700 percent respectively with respect to the base year, 1950.

The population growth trend results in a global process of aging and hence leads to an inversion of the bell shape of the population pyramid.

Germany⁷¹

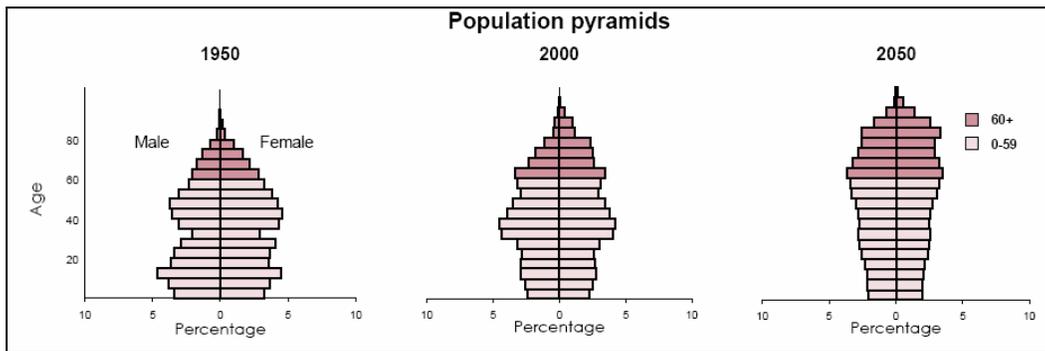


Figure 11. Development of the Algerian Population from 1950 to 2050

Source: United Nation Population Division, DESA, United Nations: *World Population Ageing 1950-2050*.

Algeria

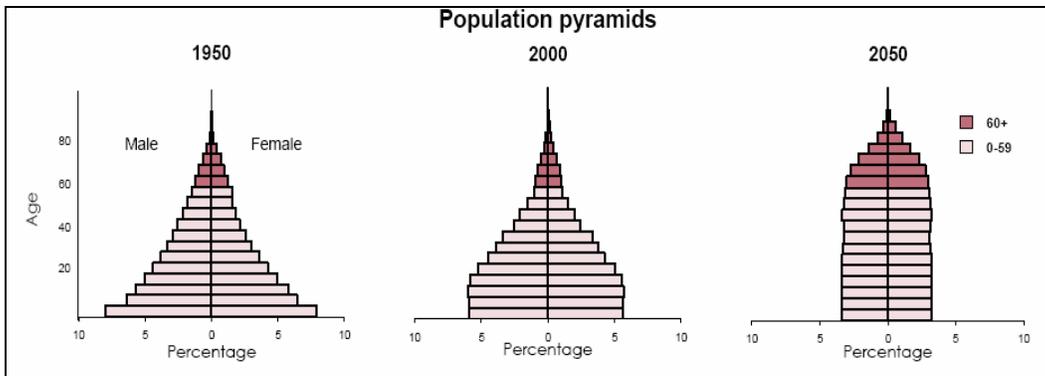


Figure 12. Development of the Algerian Population from 1950 to 2050

Source: United Nation Population Division, DESA, United Nations: *World Population Ageing 1950-2050*.

⁷¹ As the trend is the same in corresponding countries or regions respectively, the pyramid of only one representative country is introduced here.

Occupied Palestine Territory

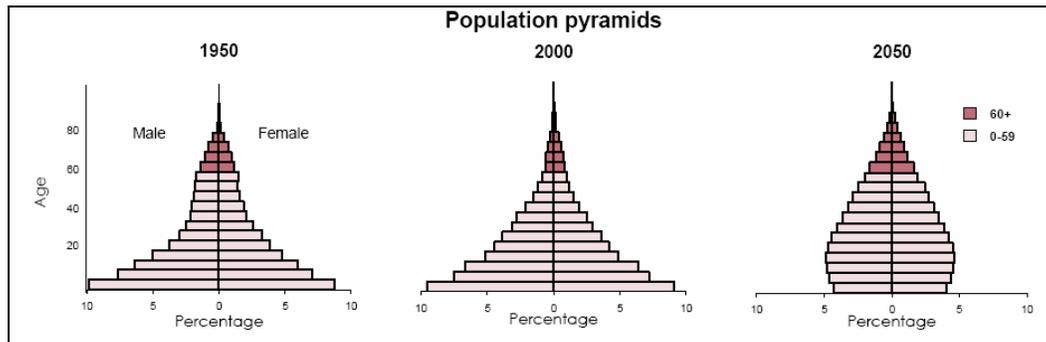


Figure 13. Development of the Occupied Palestinian Territory’s Population from 1950 to 2050

Source: United Nation Population Division, DESA, United Nations: *World Population Ageing 1950-2050*.

Finally, the global median age increased from 23.6 years in 1950 to 27.4 years in 2005 and the UN predicts it will reach 36.8 years in 2050.⁷² However, splitting up this global consideration and taking a closer look at the above mentioned countries, one has to realize that the situation changes significantly. For the European countries, the average median age will increase from 40.5 to 59 within the next fifty years. The same indicator is about to increase in the Mahgreb region from an average of 23.4 to 47 years, and for the selected Middle East countries, from 22.6 to 36.7 years respectively.⁷³

Now what are the consequences of this trend with respect to security? First, we can assume that, due to a higher fraction of elderly people in combination with fewer younger ones, the workforce will shrink in the future, which may reduce the economic performance. Furthermore, due to the increasing amount of elderly people, a higher portion of the obtained economic assets must be spent for welfare benefits, which will strain the military budget and may in the long run erode the “industrial democracies’ military capabilities and global presence.”⁷⁴ Apart from these two domestic-related

⁷² UN Population Division, “World population prospect,” *The 2002 revision population data base*, <http://esa.un.org/unpp/> (accessed 21 January 2005).

⁷³ Ibid.

⁷⁴ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 2, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

reasons, national security is affected by the demographic trend in less developed regions, too. As already described, aging in those regions will set in with a certain time lag, so that Europe will still be opposed by much younger societies in its direct proximity, that is, the youth bulge of the MENA-States.⁷⁵ However, due to the socio-economic problems that these countries will face, caused by their huge amount of young adults, in the coming decades conditions of instability will emerge to threaten Europe's vital economic and security interests.⁷⁶ The next sections will now discuss these aspects in more detail.

2. The Implications of Aging on the European Society

Caused by the increasing amount of elderly people, the societies' structure in regard to the age composition is about to invert. By this process, in particular, the performance of industrialized countries will be significantly affected in the next decades. Due to declining birth rates in combination with an increasing life expectancy, the workforce is about to shrink. This trend is worsened by two effects. First, in industrialized countries, and especially in Europe, young people enjoy a high-level and long-lasting education, which results in their accessing the labor market at higher ages. At the other end of a professional career, those workers retire much earlier than necessary as they are required to do by the official retirement age of 65. So the theoretically available workforce between the ages of 15 and 64, is being additionally reduced. Thus, assuming an access into the labor market at an average age of 20 and retirement at the age of 60, the French workforce for example, will be affected by a decline of approximately 10 percent over the next five decades. The German, Italian, and British labor forces will shrink by approximately 21, 41.5 and 12 percent, respectively.

⁷⁵ MENA: Middle East and North Africa.

⁷⁶ Daniel Gouré, "International Security and the Aging Crisis," *CSIS International Security Program* (December 2000): 2, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

Labor Force	France	Germany	Italy	Great Britain
2005	33073	45178	32034	32371
2050	29734	35718	18750	28366
absolute decline	-3339	-9460	-13284	-4005
relative decline [%]	-10.1	-20.9	-41.5	-12.4

Table 1. Decline of Labor Force in 1000

This dramatic decline of labor force has a far-reaching influence not only on the fiscal situation, but also on the competition between industry and the military to recruit highly qualified personnel.

Because of the above highlighted reduction of the workforce, fewer workers will be available in the future to produce goods and services. Even in the case of higher productivity and further technological progress, it remains questionable, whether they can compete for a probable shortfall of supply that undercuts domestic demand. If this scenario turns out to be true, increasing prices resulting in higher wages, on the one hand, and an increasing need of imports, on the other hand, may be likely.⁷⁷ When viewed from the micro-economic point of view, a shrinking workforce seems to lead to overcapacities as demand declines. And/or, since an aging society has “different preferences and needs than a younger population,” product demand may change and the production of goods and services has to be adapted accordingly.⁷⁸ In a worst-case scenario, such a “labor force contraction could depress economic output, boost inflation and curb investments.”⁷⁹

⁷⁷ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 25, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

⁷⁸ Axel Börsch-Supan, “Global Aging Issues, Answers, More Questions,” *Mannheim Research Institute for the Economics of Aging (MEA)*, University of Mannheim, Germany (July 2004): 21, http://www.mea.uni-mannheim.de/mea_neu/pages/files/nopage_pubs/li2ingsuenc0skcz_dp55.pdf (accessed 6 November 2004).

⁷⁹ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 24, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

Within this context, the U.S. defense expert Daniel Gouré, Deputy Director of the International Security Program of CSIS, emphasizes that official projections of the Organization for Economic Co-operation and Development (OECD) estimate that the Gross Domestic Product (GDP) growth rates of the European Union will decline by 0.4 percent per annum during the time period between 2000 and 2025, and of annually 0.9 percent between 2025 to 2050.⁸⁰ The consequences of this development will be not only reduced future GDP growth rates, but also reductions in tax revenues. Such occurrence, will lead inevitably to problems in funding social welfare beneficiaries and retirement payments caused by the increasing number of pensioners.

Whereas today between 2.2 and 2.6 workers support one pensioner, in 2050 only 1.4 workers will be available to support one pensioner. The situation is even worse in Italy, where the ratio of workers per pensioner is prognosticated to be one in 2050.

Dependency Ratio	France	Great Britain	Germany	Italy
2005	0.38	0.38	0.45	0.45
2050	0.71	0.71	0.77	1.00

Table 2. Old-Age Dependency Ratio

Hence, it is fair to assume that the burden of the European social welfare systems will increase and that more money will have to be spent for social benefits. These budgetary challenges were examined by the Aging Working Group (AWG) of the European Policy Committee (EPC) in a very detailed way. Based on an assumption that the current policy scenario can be taken for granted, this working group projects an increase in spending on public pensions for Germany from 11.8 percent in 2000 to 16.9 percent in 2050 of the GDP at the time, respectively.⁸¹ With respect to the expected increase of public expenditures on health care, the AWG predicts an increase from 5.7

⁸⁰ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 4-5, <http://www.csis.org/gai/intlsecaing.pdf> (accessed 6 November 2004).

⁸¹ Economic Policy Committee (EPC), *The impact of aging on public finances: overview of analysis carried out at EU level and proposals for a future work programme*, (Brussels, 22 October 2003), 14.

percent in 2000 to 7.1 or 7.8 percent in 2050 as share of GDP, depending on whether a GDP-per-capita or a GDP-per-worker cost assumption is applied.⁸² Since these data are used in the next chapter, which discusses the military budgets of different European nations, they are presented and explained in deeper detail.

Thus, considering the future scenario, it is obvious that European countries will have to deal with severe financial problems and demography-related challenges. And the fiscal situation is further strained by additional military budget requests necessary for transforming and adapting the armed forces to new threats and tasks mostly resulting from demographic changes in potentially unstable regions. Such budgetary needs can be justified in two ways. First, competition between industry and the military will intensify in the recruitment of highly qualified and motivated personnel. The personnel requirements are important because, due to the declining scale of the workforce, industry has to increase its productivity by using more sophisticated technology, and the military has to compensate for lacking personnel by a dependence on modern technology as well. The military's request for higher-qualified personnel is additionally justified by requirements like minimally invasive assaults, minimal collateral damages, and as few of their own casualties as possible. To achieve these goals, modern technology and its safe and correct handling is mandatory.

These aspects and their constraints on military budgets will be discussed later in more detail. First, however, it is necessary to understand the influence of the key demographic variables on the Middle Eastern and North African populations.

3. The Implications of the Youth Bulge on Developing Countries

From the point of view of industrialized countries, a large number of young, educated adults in combination with appropriate labor demands is a “demographic bonus” to economic growth and increasing prosperity.⁸³ However, in countries where

⁸² Economic Policy Committee (EPC), *Budgetary challenges posed by aging populations: the impact on public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances*, (Brussels, 24 October 2001), 42-44.

⁸³ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 42.

economy is underdeveloped and employment possibilities are rare, an over proportionate number of young adults may result in socio-economic strains and violence.⁸⁴ Some countries, especially those on the southern shores of the Mediterranean Sea, need to see experience a dramatic increase of their younger people, aged between 15 and 29, over the next 20 years. Most countries affected by the youth bulge, however, are not prepared to handle this challenge. Many of those have weak economies, and institutional and political constraints as well that prevent investments or discourage private economic activities necessary to generate a greater number of jobs.⁸⁵ According to the International Labor Organization (ILO), the unemployment rate of “young semi-educated” adults living in cities in the Middle East, is most severe. According to the ILO, this is the result of too few entry-level jobs combined with higher expectations and a “reluctant behavior to take manual low-status jobs.”⁸⁶

To illustrate the present circumstances of economic development and the number of young adults in the selected European and MENA countries, I compiled pertinent data from the IMF data base. As shown in the graph below, the growth of youth in Europe⁸⁷ declines with respect to the year 1980, but the GDP per capita⁸⁸ increases over-proportionately. This situation looks totally different in the selected MENA countries.

Here, in the selected countries of the Middle East and the Mahgreb,⁸⁹ the number of young adults approximately doubled over the last 25 years. During the same period, however, economic growth, measured in GDP per capita, developed in an opposite direction.

⁸⁴ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 41.

⁸⁵ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 37, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

⁸⁶ *Ibid.*, 37.

⁸⁷ France, Germany, Italy, United Kingdom.

⁸⁸ GDP data are compiled from GDP in current prices and in US \$.

⁸⁹ Syria, Lebanon, Palestine, Jordan, Egypt, Iran, Iraq, Israel (GDP data are not available for Iraq and Palestine, Israel as out layer excluded).

In the Middle East the GDP per capita first declined and then started to increase from 1990 on, whereas the Mahgreb countries experienced negative growth with respect to 1980. So the GDP per capita of the Middle East grew by 60 percent over the last twenty-five years, but, in contrast to that region, the GDP per capita of the Mahgreb countries dropped 25 percent below the level of 1980.

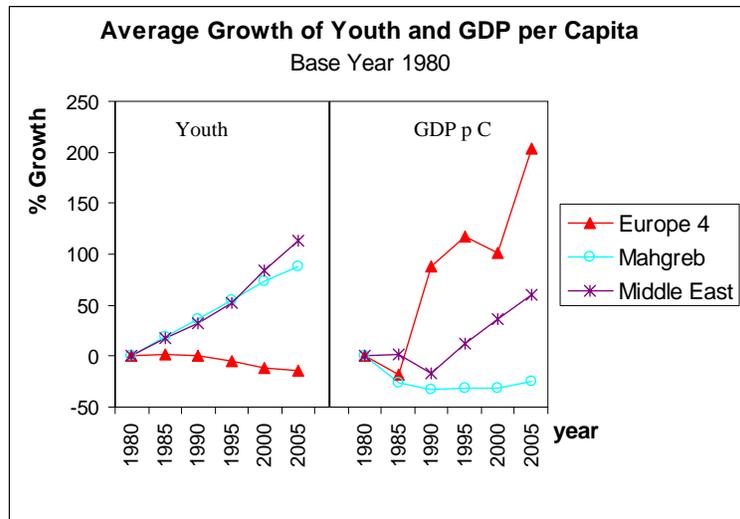


Figure 14. Growth Rate of Young Adults and GDP per Capita

The consequence of the above-illustrated situation is a high unemployment rate in these countries. And the unemployment rate of young male adults is three to five times higher than that of all adults. Moreover, young adults tend to suffer lengthy period of unemployment between the end of their education and their “first placement in a job.”⁹⁰

This occurrence of slow or no economic growth, combined with a high fraction of young adults in the total population, puts the related governments under severe pressure.

⁹⁰ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 44.

An inadequate integration of the youth into the economic process may lead to further political “destabilization, ethnic wars, revolutions and anti-regime activities.”⁹¹

Thus, many scholars link the unrests of the 1970s and 1980s in Turkey, Algeria, Egypt, Iran, and even Ireland to the existence of a huge youth bulge.⁹² A high unemployment rate combined with low education is being held responsible for conditions that finally led to coups in 1971 and 1980. Algeria’s youth bulge, for example, contributed to a riot, allegedly because of an absence of “adequate education, employment and housing opportunities.” According to the CIA’s *Long-Term Demographic Global Trends*, Algeria’s unemployment rate is higher than 30 percent. Egypt is mentioned in the same context, because the same mechanisms there as in Algeria contribute to violence. Moreover, an Egyptian scientist cited claims that graduates from universities especially, who are looking for jobs, are discontent and impatient with the social-economic situation, and therefore are potential candidates to become “Islamic radicals.”⁹³ Even the fall of the Shah and the subsequent seizure of power by the Ayatollah regime in Iran can be included in this context of rioting youth and the “street politics of 1977-79.” An analysis of the pertinent demographic data of the mid- 1970s shows that “half of Iran’s population was under 16 and two-thirds was under 30.”⁹⁴ An example for Western Europe mentioned in the CIA report is the conflict between Catholics and Protestants in North Ireland. It argues that one of the reasons for the riots was the intense activity by the Catholic population of Ulster, due to its younger age structure.⁹⁵

According to a U.S. government study, such events are more likely to happen, and the probability increases, if the ratio of young adults aged 15 to 29 years with respect to cohorts aged between 30 and 54 is greater than 1.27.⁹⁶ Other scholars, who also have

⁹¹ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 39, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

⁹² Ibid., 39.

⁹³ Ibid., 39.

⁹⁴ Ibid., 39.

⁹⁵ Ibid., 39.

⁹⁶ Ibid., 39.

investigated the relationship between youth and the likelihood of violent conflicts developed further assessment ratios. Among them, scientists at Population Action International (PAI) developed a ratio that compares cohorts aged 15 to 29 with cohorts of all adults older than 15 years.⁹⁷ In their study, the proportion of young adults can be written as:

$$YA = \frac{N_{(15-29)}}{N_{(15+)}}$$

Using that ratio and Christian Mesquida's work (University of York, Canada), PAI further derived a stress benchmark expressing the risk of violent actions. This benchmark consists of four risk categories and is illustrated in Table 3.

Category	Stress Level	Proportion of Young Adults [%]
4	Extreme	> 50
3	High	$40 \leq x < 50$
2	Medium	$30 \leq x < 40$
1	Low	< 30

Table 3. Stress Level Categories

Source: Population Action International: *The Security Demographic*

Mallory developed the so-called young male ratio in 1970. He argues that the most volatile parts of the population are young males. Therefore, his ratio expresses the quotient of young adults, again aged between 15 and 29 years with respect to adults of 30 years and older.⁹⁸

⁹⁷ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 89.

⁹⁸ *Ibid.*, 89.

$$YMA = \frac{N_{(15-29)}}{N_{(30+)}}$$

However, in the following outlook, only the first two ratios are used to examine probable future stress levels. Herewith, the given figures represent the change in the stress level caused by the youth bulge according to the PAI definition in Table 3 caused. The two years considered are 2005 and 2025. The *yes* or *no* represents the assessment of the U.S. government whether destabilization, ethnic wars, revolutions, and anti regime activities are likely to increase with respect to the present situation.

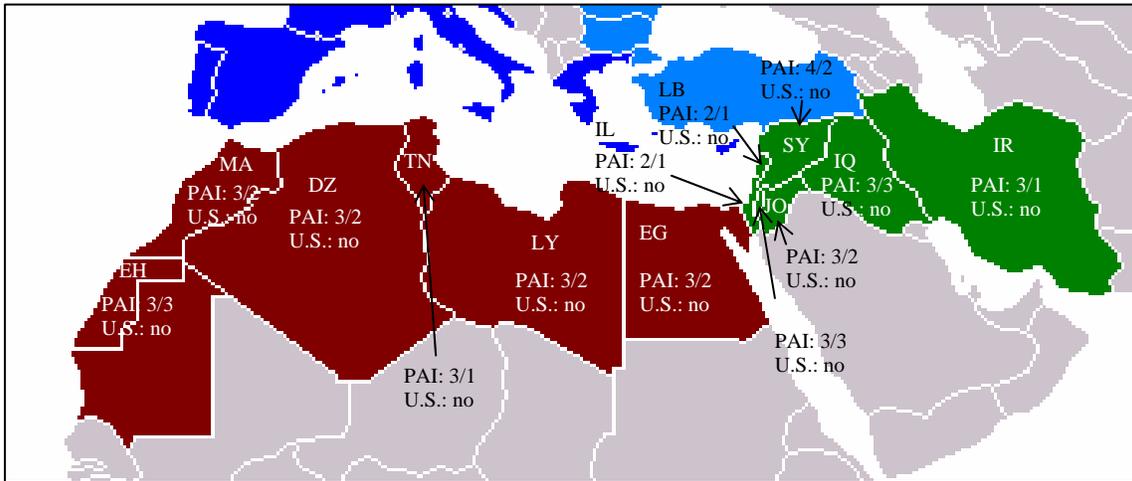


Figure 15. Change of Stress Level from 2005 to 2025
 (After) Population Action International: *The Demographic Security*

Evaluating the results, this graphic shows that except for Mauritania, Palestine, and Iraq, the stress levels in all other countries decline from *high* to *medium*. In regard to demographic development in Syria, the stress level even falls from *extreme* to *medium*, and that of Lebanon and Israel from *medium* to *low*. This decline could be explained by the process of aging that also affects these countries. However, the influence of a high number of young adults on violence per se can still be assessed for the Mahgreb countries and the Middle East on average as medium. Taking into account the results of the application of the ratio defined by the U.S. government, the probability of risk changes concerning destabilization, ethnic wars, revolutions, and anti regime activities will

remain unchanged in the future: that is, it will keep the level it has today. The countries with the highest probability of instability are Mauritania and Palestine. Their ratios will remain equal to 1.13 and 1.16 respectively in 2025. So, although aging starts to dampen the violent potential of young adults, one must bare in mind that the total population keeps on growing. In sum, this region will remain an area of instability for the next generation.

One aspect that is not considered in the above discussed ratios, but that contributes to instability and social unrest, is urbanization and its rapid growth. Strongly linked with that problematic is the competition for resources like arable land and water. This trend and its implications are discussed in the following chapter.

B. URBANIZATION AND URBAN GROWTH

Technically speaking, urbanization is just “the process by which large numbers of people become permanently concentrated in relatively small areas, forming cities.”⁹⁹ Therefore, urbanization can be seen as a result of migration movements – the third key demographic variable – at the expense of the rural portion of the population. Thus, while urbanization is the core of societal development, and therefore jointly responsible for economic growth, technological progress, health improvement, and education, it also links the countries by communication and ties up international relations. In other words, urbanization can also be considered as a trigger for globalization.¹⁰⁰

However, urbanization is a two-edged blade. As I already pointed out briefly in Chapter IV, urbanization represents a demographic stress factor, too. According to official estimations 50 percent of the world population will live in urban areas, at the latest, in 2015. As this trend is closely linked with the level of societal development, that situation already occurred approximately at the beginning of the 20th century in France, Germany, Italy, and, the United Kingdom. Even the MENA countries already achieved this level of urbanization between the middle of the 1960s and the 1980s, and this trend

⁹⁹ Encyclopedia Britannica online, <http://www.britannica.com> (accessed 09 February 2005).

¹⁰⁰ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 50.

shifts further toward the developing countries.¹⁰¹ So, in former times almost all big cities were in industrialized countries, but already today that situation has changed, so that only one fifth of the 20 cities with more than 10 million inhabitants are still in the developed world. To underline this argument, Cairo can be taken as an example. Its population grew from 2.1 million in 1950 to 10.5 million in 2000 and is predicted to reach 14.4 million in 2015. This is equivalent to an annual growth rate of 3 percent whereas the same index for European capitals shows stagnation in average over the last 25 years.¹⁰²

Comparing these figures with the urban growth rates of European cities and with one of the MENA countries, and considering their differences in economic growth as well, illustrates how much higher the burden of this region must be in order to cope with the problems emerging from urbanization. For example, the average urban growth rate of approximately 2 percent per annum in the MENA countries may lead to the exhaustion of resources and consequently to severe supply problems. Above all, one may not forget that most of these countries' territory consists of desert and only scarce water resources are available, which means that only small fractions of land are arable, despite the use of irrigation methods. But as already shown in Figure 10, the population of this area is still growing and this process will not stop until 2050. So the process will cause even more consumption of resources such as land and water, and the financial burden to secure support for the population by imports will increase.

In case economic growth is not able to produce sufficient assets to provide the necessary development of urban infrastructure, like sewage systems, health clinics, schools, transportation, housing and industrial areas, environmental problems, declining living conditions, and slum building due to a steady stream of new residents from the countryside is inevitable.

¹⁰¹ See Figure 7, Distribution of Rural and Urban Population, 31.

¹⁰² United Nations, "UN-Habitat," *United Nations Human Settlements Programme*, <http://www.unchc.org/programmes/guo/table11.asp?countrycode=818> (accessed 10 February 2005).

This combination of economic weakness and young people's high expectations and disappointed hopes may suddenly result in riots and upheavals.¹⁰³ Although cities tend to be multicultural, "bringing together different ethnic groups and religions into close social contact," mutually benevolent attitudes may change completely under the pressure of socio-economic competition.¹⁰⁴ According to PAI, criminal activities, social protest, and labor unrest in urban areas were the main reasons for ethnic and religious conflicts during the 20th centuries.¹⁰⁵ Such explosive situations may contribute, especially in Muslim countries, to a hotbed for extremists who may exploit the situation in order to "accelerate violent campaigns against secular governments and their supporters."¹⁰⁶

To determine the correlation between rapid urban growth and civil conflicts, the PAI institute developed a stress level index based on the growth rates for the period from 1990 to 1995 similar to the risk assessment concerning the youth bulge.

Again, the countries were divided into several categories, each representing a different stress level. Herewith, the chosen benchmark of 4 percent or higher, referring to the high and extreme stress-level category, represents the economic growth of "high-performing economies." In contrast to that, the level of 1 percent or below, chosen for the lower boundary, is in compliance with the average urban growth rate of industrialized countries.¹⁰⁷

¹⁰³ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 60, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

¹⁰⁴ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 51.

¹⁰⁵ *Ibid.*, 52.

¹⁰⁶ Brian Nichiporuk, *Regional Demographics and the War on Terrorism*, RAND Population Matters (2000): 23, <http://www.rand.org/publications/RP/RP1057/RP1057.pdf> (accessed 6 November 2004).

¹⁰⁷ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 89.

Category	Stress Level	Urban Growth Rate per annum [%]
3	High, Extreme	> 4
2	Medium	$1 \leq x < 4$
1	Low	< 1

Table 4. Stress Level Categories

Source: Population Action International: *The Security Demographic*

In addition, the likelihood of an outbreak of civil conflict was calculated, using a set of countries that experienced a “newly initiated civil conflict” in the period between 1990 and 2000. The urban growth rate thereby correlates to the above mentioned categories of stress level. The results show that the likelihood of civil conflicts will increase by 100 percent, if the stress level caused by the annual urban growth rate increases from level 2 to 3.¹⁰⁸

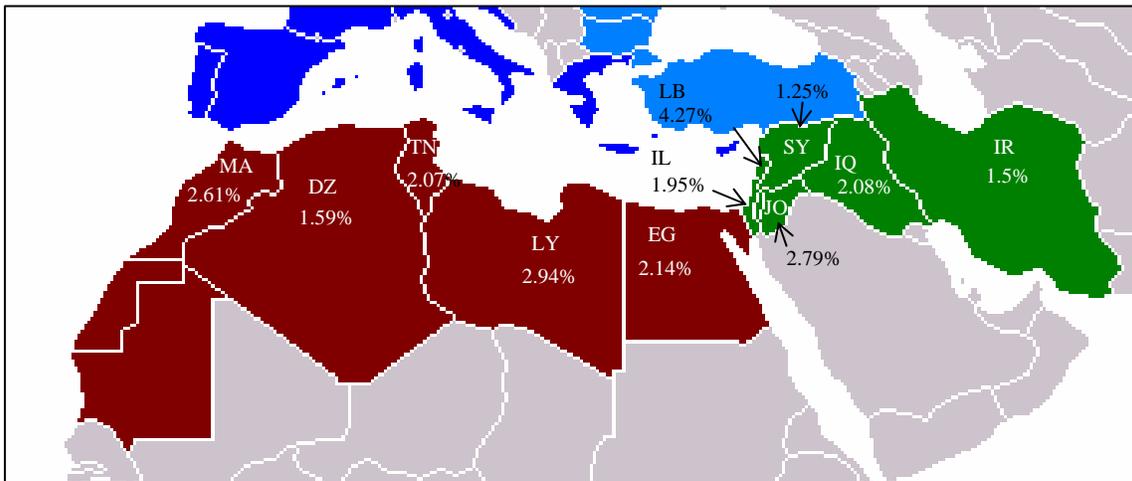


Figure 16. Average Annual Urban Growth Rate 1985 - 2015
(After) Population Action International: *The Demographic Security*

¹⁰⁸ The likelihood for a civil conflict is specified by 20% on stress level 2 and by 40% on stress level 3.

This method is now applied to the present and future situation of urban growth in the MENA countries' capitals. However, as possible future conflicts cannot be foreseen, the specification of appropriate conflict probabilities does not take place. So only the stress levels are predicted, which are based on and compiled from appropriate data sets from UNCHS data sources.

Setting the results illustrated in Figure 16 in relation to the benchmarks given in Table 3, the stress caused by the different urban growth rates can be assessed equal to level 2 almost all over the region. The only exception among the chosen capitals is Beirut, the stress level of which correlates to category 3. Although, almost all countries can be assigned to category 2, many of them represent stress levels in the upper half of this category. As, however, civil conflicts may arise in this environment at any time for any reason, this region still represents a certain factor of instability.¹⁰⁹

Among others, the supply problems resulting from scarcity of water and arable land were already briefly mentioned in this chapter. Although these problems are not the main focus of this discussion, they nonetheless contribute to and are jointly responsible for the instability in the Middle East and North Africa, and therefore have great impact on security issues. So, in the upcoming chapter, this issue will be introduced.

C. DRAIN ON RESOURCES – WATER AND ARABLE LAND

The last known war over water happened 4,500 years ago. It was fought between the city-states of Umma and Lagash in Mesopotamia, which today is in southern Iraq.¹¹⁰ But whereas many wars were fought over land in the past, threatening conflicts about water resources were solved by contracts. Consequently, during the last 820 years, more than 3,600 water-related treaties were signed.¹¹¹ As can be seen from this large number of treaties, historically, water rights were obviously often a reason for struggle.

¹⁰⁹ Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*, Eldis Gateway to Development Information (July 2001): 60, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

¹¹⁰ Sandra L. Postel and Aaron T. Wolf, "Dehydrating Conflict," *Foreign Policy*, No. 126 (Sep.-Oct., 2001): 60.

¹¹¹ *Ibid.*, 60.

However, although the affected countries were able to solve those problems peacefully in the past, that is no guarantee that this will happen in the future, too. This point is all the more valid as, in contrast to population, available water resources have not increased since the Mesopotamian days, with the consequence that many countries with scarce water resources are pressing against the limits of water availability.¹¹²

In the context of urbanization, the impact of water scarcity on security has two dimensions, a domestic one and an international one. Although urbanization can be seen as a driving factor for modernization and progress, it also stresses the water and arable land resources that are needed to produce food. So, water scarcity and droughts may result in internal socio-economic tensions or conflicts, caused by the competition for distribution. If the fresh-water resources in a country's own territory are not sufficient, additional water has to be taken from river systems. This, however, contains a potential risk of international crises, as it influences the availability of water in neighboring countries, too.

Among others, this is especially valid for the MENA countries. As most of their territory consists of desert, they are heavily dependent on irrigation. So dam projects, built by one country are watched very carefully. One example is Turkey's Greater Anatolia Project. The dams and irrigation systems built in the upper reaches of the Tigris and Euphrates affect the water supply of Syria and Iraq by 40 percent and 60 – 80 percent, respectively.¹¹³ Syria and Iraq also, are two countries with a predicted considerable population growth over the next decade. Iraq is expected to grow by 28.8 percent during the next ten years, whereas Syria's growth rate is prognosticated as 23.4 percent. Both countries will double their population size in 2050 within the time period between 2040 and 2050. But during the next ten years, the Turkish population will also grow by 12 percent.¹¹⁴

¹¹² National Intelligence Council (NIC), *Global Trends 2015: A Dialogue About the Future With Nongovernment Experts*, NIC 200-02 (December 2000): 27, <http://www.cia.gov/cia/reports/globaltrends2015/> (accessed 6 November 2004).

¹¹³ Sally Ethelston, "Water and Women: The Middle East in Demographic Transition," *Middle East Report*, No. 213, Millennial Middle East: Changing Orders, Shifting Borders (Winter 1999): 11.

¹¹⁴ UN Population Division, "World population prospect," *The 2002 revision population data base*, <http://esa.un.org/unpp/> (accessed 10 February 2005).

Another example that may contribute to international tensions is the water situation in Egypt. “Egypt depends on the Nile river water for 97% of its renewable fresh water supply.”¹¹⁵ Egypt still draws most of its water supply from the Nile, as was assured by a treaty of 1959. Countries like Sudan, Ethiopia, Kenya and Tanzania, are also growing considerably and develop their own plans to draw water from the Blue and White Nile to satisfy their own increasing needs for arable and irrigated land.¹¹⁶

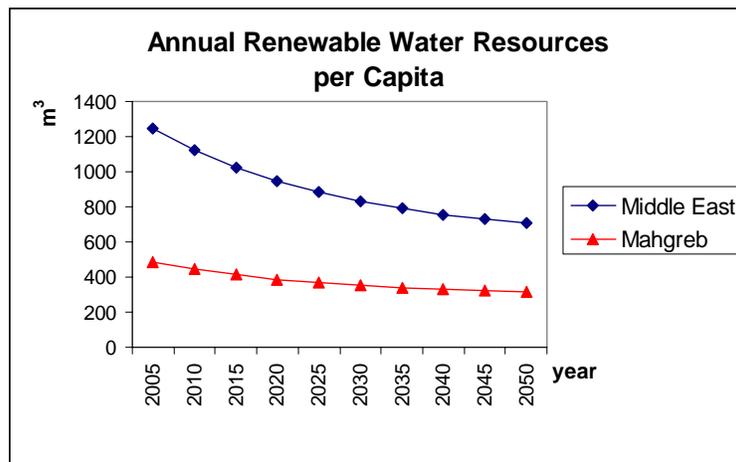


Figure 17. Renewable Water Resources per Capita

To illustrate the water situation in the MENA countries in total, the Figure 17 shows the average development of renewable water resources per capita over the next forty-five years. Due to the increase of population, the water resources in the Middle East will decline by almost 50 percent and already low resources in the selected North African countries, by almost 35 percent. The countries with the lowest resources are Jordan, Israel and Libya. These countries have only an availability of renewable water of 157 m³, 255 m³, and 106 m³ per capita per annum, respectively. Libya drills wells in order to exploit “fossil water,” as its annual consumption is higher than 100 percent of its renewable resources.

¹¹⁵ Sally Ethelston, “Water and Women: The Middle East in Demographic Transition,” *Middle East Report*, No. 213, Millennial Middle East: Changing Orders, Shifting Borders (Winter 1999): 11.

¹¹⁶ *Ibid.*, 11.

PAI also developed a benchmark for this stress categories. According to the Institute, the stress level caused by water scarcity is extremely high, and in all the selected countries the availability of renewable fresh-water resources is less than 1,667 m³ per capita.¹¹⁷

Similar, but not as dramatic, is the situation concerning cropland. Although in the above mentioned regions, cropland has to be developed mostly by irrigation, the production of food can be increased by using better technologies, such as gene-manipulated seeds. Furthermore, the worldwide production of grain will still be adequate in the future to supply the increased world population.¹¹⁸ However, the problem of distribution, transportation, and the threat of droughts and famines will also remain existent, although according to PAI, the considered countries' stress levels will be consistent to category 2 in the near future.¹¹⁹ With an availability of cropland between 0.21 and less than 0.35 hectare per capita, the risk of outbreaks of civil or even international conflicts is assessed as rather low. However, according to a report of the U.S. National Intelligence Council, the risk of famines in combination with suppressive governments and/or internal conflicts and natural disasters may lead to the prevention of or limited relief efforts by third nations, as happened in Somalia in the early 1990s.¹²⁰

In order to proceed in the same sequence as above, the average availability of cropland per capita is shown in Figure 18. Although, as already mentioned above, PAI assesses the stress level by category 2 and the risk of civil conflicts, caused by competition for cropland, as rather low, this situation has to be reassessed, concerning the future development. Already in 2015, the stress level for the Middle Eastern countries will shift to category 3 and the Mahgreb countries will follow in 2040 respectively.¹²¹

¹¹⁷ Richard P. Cincotta, Robert Engelman, and Daniele Anastasion, *The Security Demographic: Population and Civil Conflict after the Cold War*, (Washington D.C., Population Action International, 2003), 60.

¹¹⁸ National Intelligence Council (NIC), *Global Trends 2015: A Dialogue About the Future With Nongovernment Experts*, NIC 200-02 (December 2000): 26, <http://www.cia.gov/cia/reports/globaltrends2015/> (accessed 6 November 2004).

¹¹⁹ *Ibid.*, 26.

¹²⁰ *Ibid.*, 26.

¹²¹ Category 1: more than 0.35 ha per capita, Category 2: less than 0.35 ha but more than 0.21 ha per capita, Category 3: less than 0.21 ha per capita.

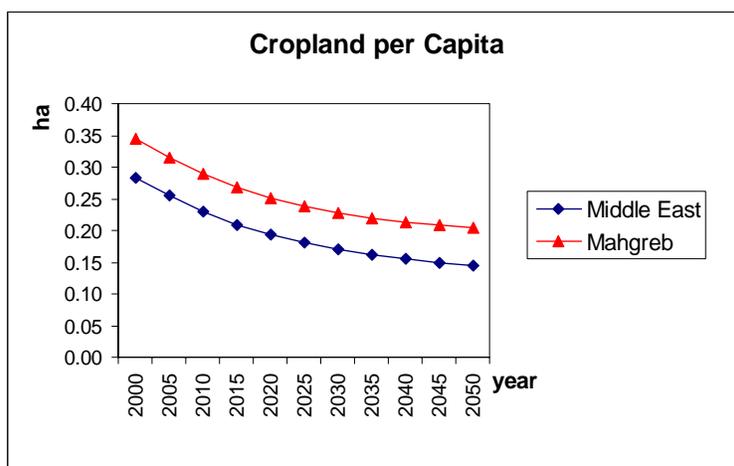


Figure 18. Cropland per Capita

So in sum it can be argued that, although the security in the above mentioned regions was not yet affected by civil conflicts and upheavals caused by water or cropland scarcity, the situation cannot be eased drastically in the future, as these resources are naturally limited. Therefore, the risk potential is likely to increase.

D. DEMOGRAPHIC TRENDS AND THEIR IMPLICATION ON FUTURE CONFLICTS

By referencing three key demographic variables - fertility, mortality, and migration – I have illustrated the development of industrialized versus developing countries in select European countries and some in the Middle East and Northern Africa. In one section, I discussed pertinent trends caused by those variables: aging versus a youth bulge, urbanization combined with rapid urban growth and scarcity of natural renewable resources. Those trends now affect security issues in three ways:

First, due to countries’ differential growth rates and the resulting age composition, their available sources of national power change. Second, socio-economic stress, the ethnic compositions and differences in the culture of societies, caused for example by internal and external factors like forced or voluntary migration, often give rise to new sources of conflict. And, last but not least, the very nature of conflict itself may also

change in the future. To a large extent, urbanization and its rapid growth rate are seen as principle driving factors.

The following sections comprise a more detailed deliberation of the demographic trends and their implications for future conflicts and countries' internal and external security.

1. Demography and Future Conflicts

Looking into the future, demographers predict not only falling birth rates and consequently shrinking societies, but also an increase in the number of people who will live in an urban environment. Taking into account the ongoing transition process and demographers' projections, researchers show that more than 70 percent of the population in the Middle East and the Mahgreb countries will live in urban areas in 2010 (see Figure 7), and this trend will proceed further. The incentives for people to move into urban centers are manifold. Among others, scholars have identified incentives like greater access to information and the perception of an urban area as economic center of gravity. Societal events that contribute to urbanization include rural devastation, one's loss of economic existence in a rural area, and high birth rates with lower infant mortality. Government- and conflict-generated migration are also named as triggering issues.¹²² Consequently, urbanization changes not only the "physical geography" of an area but also "human beings socially, psychologically and behaviorally."¹²³ That urban areas have become the center of countries' economic and political infrastructure means a shift also in the huge burden and responsibility of political leaders. Especially in less developed and undeveloped countries, governments must increasingly deal with overcrowding, socio-economic stress, issues involving ethnic compositions of societies and differences in culture, slum building, pollution, transportation bottlenecks,

¹²² Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*. Eldis Gateway to Development Information (July 2001): 55, <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

¹²³ Michael C. Desch, "Why MOUT Now?" in *Soldiers in Cities: Military Operations on Urban Terrain*, ed. Michael Desch, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 5, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

unemployment, low budgets, and man-made disasters.¹²⁴ Hence, as the physical and social-economic environment of a population is influenced by this trend, the process of urbanization may create a hotbed for social tension and conflict. According to Brian Nichiporuk, a RAND defense specialist, this described development also leads to the emergence of new “strategic means” such as “ethnic diasporas and the manipulation of natural resource availabilities.”¹²⁵ Considering these entire changes one can deduce that, if the environment changes, the character of future conflicts is likely to change as well.

a. The Physical Environment

In the past, urban warfare was extremely lethal and costly and was therefore avoided as far as possible. However, with a proceeding differential growth in military technology, experts have diagnosed a shift toward asymmetric warfare, in which urban warfare can be used by adversaries to nullify the technological advantage of the other side in a “high-intensity conflict.” In such an environment, “firepower and maneuver,” the “primal variables of military operations,” will be extremely limited.¹²⁶ This terrain offers many opportunities for “ambushes, snipers and booby-traps,”¹²⁷ as multistoried buildings with basements offer numerous possibilities to maneuver in the third dimension.¹²⁸ Sewer systems and underground tunnels may serve as transit routes “entirely out of sight of the attacker.”¹²⁹ In addition, cratered streets and barricades “channel attacking forces into the killing zone,” becoming further obstacles in urban

¹²⁴ Michael C. Desch, “Why MOUT Now?” in *Soldiers in Cities: Military Operations on Urban Terrain*, ed. Michael Desch, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 5, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

¹²⁵ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 19, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹²⁶ Robert H. Scales, Jr., *Future Warfare Anthology - Revised Edition*, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 93, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

¹²⁷ Jane’s, “U.S. Military R&D, Contexts, Themes & Conclusions,” (January, 1997), <http://jdw.janes.com/> (accessed 22 March 2005).

¹²⁸ Barry R. Posen, “Urban Operations: Tactical Realities and Strategic Ambiguities,” in *Soldiers in Cities: Military Operations on Urban Terrain*, ed. Michael Desch, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 151, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

¹²⁹ *Ibid.*, 151.

warfare.¹³⁰ Buildings can be used as platforms, making even armored vehicles more vulnerable: they can be attacked from different angles, from which the less-armored upper sides can be penetrated more easily.¹³¹

In addition, to avoid large collateral damage, precision-guided weapons must be used. Urban environments also provide adversaries with an incentive to use cultural monuments as cover and to take civilians as hostages and use them as human shields. Due to the natural “blindness” of city streets, this terrain makes it easy to wage guerilla warfare and thus shift the balance of power.¹³²

Similar arguments are valid in the case of low-intensity conflicts. Here too, the urban environment favors guerilla tactics, terrorist attacks, and sabotage of government facilities and foreign troops. At the same time, this environment makes it easy for militant groups to disappear, as the distinction between the regular population and adversaries blurs.¹³³

In sum, many argue that the demographic trend of urbanization will lead to an increasing importance of urban warfare. In this terrain, current close-support weapon systems munitions, battle management, command, control, communications, computers and intelligence (BMC⁴I) are severely limited and have to be tailored to these types of missions.¹³⁴

b. New Strategic Means

A further threat that is used as a new means in conflict is transnational terrorism. The U.S. National Intelligence Council (NIC) emphasizes that in states with

¹³⁰ Jane’s, “U.S. Military R&D, Contexts, Themes & Conclusions,” (January, 1997), <http://jdw.janes.com/> (accessed 22 March 2005).

¹³¹ Barry R. Posen, “Urban Operations: Tactical Realities and Strategic Ambiguities,” in *Soldiers in Cities: Military Operations on Urban Terrain*, ed. Michael Desch, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 151, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

¹³² Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 19, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹³³ *Ibid.*, 20.

¹³⁴ Jane’s, “U.S. Military R&D, Contexts, Themes & Conclusions,” (January, 1997), <http://jdw.janes.com/> (accessed 22 March 2005).

weak governments, ethnic, cultural, and religious tensions provide an environment for terrorist groups. Weak economies and uncontrolled and permeable borders also contribute to this volatile situation.¹³⁵ However, in the same context the NIC indicates that the trend for government-supported or -sponsored terrorism dwindles. Instead, terrorism develops to “free-wheeling” transnational networks.¹³⁶

The other aspects of change that will affect the character of future conflicts are the use of ethnic or religious motivated diasporas and the scarcity of renewable resources to achieve political goals. Although, diasporas per se are not new, their use as strategic means during conflict, due to modern information technology, attaches new importance to them. On the one hand, diasporas can be used as fundraising organizations abroad, so weapons can be bought in the region of conflict. On the other hand, members of diasporas living abroad have access to modern education, and can use their newly acquired knowledge against the host nation to stir up trouble by so-called “non-lethal” attacks.¹³⁷ Furthermore, due to the widespread distribution of the internet, diasporas can use it to hide their activities as deployed planning cells for terrorist groups. In the worst case, even scenarios are imaginable, in which such occurrences may not only lead to remote intra- or interstate conflicts but also contribute that the conflict may spill over to a host country where appropriate diasporas are established.¹³⁸

However, ethnic groups may also use modern media in other ways than having a negative impact on international relations. Modern media offers these groups the possibility to call attention to grievances in their home countries, hoping that the international community will pressure those governments or even will intervene to try to stabilize the situation in the home country.

¹³⁵ National Intelligence Council (NIC), *Global Trends 2015: A Dialogue About the Future With Nongovernment Experts*, NIC 200-02 (December 2000): 50, <http://www.cia.gov/cia/reports/globaltrends2015/> (accessed 6 November 2004).

¹³⁶ *Ibid.*, 50.

¹³⁷ Claudia Kennedy, “The Age of Revolution,” *Strategic Study Institute, U.S. Army War College*, Letort Paper No. 3, (March 1998): 11, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

¹³⁸ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 23, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

Another instrument of new strategic means that bears great risk are conflicts induced by competition over renewable resources, especially water. As these resources are becoming scarcer on the same scale as population growth, the risk of groups using them for coercion against other countries increases.¹³⁹

In short, the nature of conflict is presently undergoing a changing momentum in keeping with the changes in demographic development. Whereas in former times wars were mainly waged on battlefields, this has already changed. Due to an increasing degree of urbanization and globalization, caused by the proliferation of modern information technology, the environment of conflict and its strategic means are changing.

Consequently, the changes in the nature of conflict have to be considered not only by military planners but also to a much greater degree by governments, responsible for the necessary successful transformation process and the appropriate equipping of armed forces to meet these new challenges.

However, although the demographic impact on the character of future conflicts will have its most visible impact on armed forces, other aspects also have to be considered. In cases in which governments and international security organizations decide to intervene in other countries, for example, by peace support, humanitarian assistance, or disaster relief operations, also changes in sources of national power and the sources of conflicts induced by future demographic development have to be taken into account. These aspects are examined in the following two chapters.

2. Changes in Sources of National Power

In times when conflicts were fought by means of less technologically developed weapons, there was a direct link between size of population and power of the appropriate political entity. However, as progress in technology occurred and industrialization moved on, manpower was replaced by technology and tactics had to be adapted to the new capabilities. So armies which were outnumbered were suddenly able to dominate

¹³⁹ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 23, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

and win wars or battles. The Prussian army at Königgrätz in 1866 and the German Wehrmacht during the first half of WWII are classic examples.

This relationship between technology and demography will become even more important in the future, as the changing demographics of developed and developing countries drift in opposite directions. This trend already influences and will continue to influence the sources of national power of “high-population-growth” and “low-population-growth” countries.¹⁴⁰

With respect to the here chosen four European countries and reflecting again on Figure 9, it becomes obvious that the number of young people the military can draw from in the future will become smaller and smaller, at least for the next 25 years. Overall the German population aged 18 to 23 will decrease by 19.85 percent. Italy will experience a decline of 25.15 percent during the same time. In France and Great Britain the situation is not so dramatic, but those countries have to cope with a decline also of young adults aged 18 to 23 years, of 4.75 percent and 9.55 percent respectively. After 2030 however, the situation stabilizes and a slight increase is predicted. Again, Italy is the exception. Its appropriate population will continue to decline to an overall of 25 percent. This problem becomes more challenging politically as well, as Germany and Italy still rely on conscript forces, and the question of draft justice, already latently present, may become more urgent.

Consequently, the forces of “low-growth states” have to “shift from manpower-intensive to capital-intensive forces.”¹⁴¹ To the same degree that the technological capabilities increase in the forces, the better and more intensively the soldiers have to be educated and trained, so that each soldier on the battlefield becomes a more and more precious “good”. And all possible has to be done to protect him and support him, with the best available weapon systems and technology.¹⁴²

¹⁴⁰ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 26, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹⁴¹ Ibid., 27.

¹⁴² Ibid., 28..

Demographically, however, the above scenarios clash with countries in a state of socio-economic crisis. To the same extent that the number of young adults decreases, the number of elderly people increases. So, more future money has to be invested into the social welfare system. Additionally, the financial situation of these countries is further stressed by steadily increasing prices for modern weapon systems. Many force systems have to be modernized and reintroduced into the military in accordance with the NATO Defense Capabilities Initiative and the European Capabilities Action Plan, such as, for example, airlift capacities, orbit-based surveillance and intelligence sensors, and precision-guided ammunition. It becomes obvious that no European country will be able to finance all these requirements on a national basis.

As far as countries with high population growth rates are concerned, their forces have to struggle with a different set of problems. While the quality of forces is no issue in industrialized countries, it is a looming one in the countries of the Middle East and North Africa. In general, these countries lack the money to “field, maintain, and operate the types of advanced, integrated weapon systems often necessary for success in modern conventional warfare.”¹⁴³

Consequently, these countries must try to compensate for those deficits. According to a RAND research paper, they have “incentives to [develop and] depend on weapons of mass destruction [WMD] and a small number of elite conventional warfare divisions for external conflicts.”¹⁴⁴

However, according to Brian Nichiporuk’s research, there are three factors that drive countries with high population growth rates to maintain large forces. First, he argues, due to their poor economic situations these countries draft more people into the military, to reduce the high unemployment rates. The result is more social stability. Furthermore, their forces are used in ways similar to Europe during the process of nation building, as school of nation to foster social cohesion. This is especially important in

¹⁴³ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 28, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹⁴⁴ Laurent Murawiec and David Adamson, “Demography and Security,” RAND Conference Proceedings of a Workshop Paris, France November 2000: 13, <http://www.rand.org/publications/CF/CF169/CF169.pdf> (accessed 6 November 2004).

regions where different ethnic groups, cultures, and religions meet. A third factor he identifies is the use of armed forces to provide internal security and to protect the government.¹⁴⁵

In sum, the different demographic developments in the identified regions change the sources of national power to such an extent that industrialized countries have to undergo a transition process from labor-intensive to technical-intensive forces due to rapidly aging and shrinking societies. In regions where the trend is the opposite, huge forces are maintained for internal stability and security reasons, but unaffordable high-tech systems as well.

3. Changes in Sources of Conflict

Because similar regions develop in a similar way, the growth rate per se does not necessarily change the conventional regional balance of power. Rather, it is the indirect influence of variables such as migration, competition for scarce resources, and differential growth rates that is the destabilizing factor.¹⁴⁶

As to some extent Chapter IV illustrates, migration influences regional security in several ways. So migration may be forced for economic reasons. It may be triggered, for example, by factors such as scarce resources, bad harvests, and land overuse due to too many people who have to live from a certain piece of land, which may result in turn famines.¹⁴⁷ Incentive factors are also important. In urban areas, the people who suffer the hardships hope for better living conditions and desire jobs in the cities. Depending on the economic capability of the country, migration may have negative repercussions in respect to security, increasing cities' higher financial burden. The need to improve the local infrastructure and to avoid slum building rests on the local officials. Furthermore, the food and supply situation may also be stress factors, especially if the incoming

¹⁴⁵ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 28, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹⁴⁶ Laurent Murawiec and David Adamson, "Demography and Security," RAND Conference Proceedings of a Workshop Paris, France November 2000: 7, <http://www.rand.org/publications/CF/CF169/CF169.pdf> (accessed 6 November 2004).

¹⁴⁷ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 35, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

migration coincides with supply shortages. Spontaneous violence may be triggered by such events, as happened in Algeria in 1988 due to increasing food prices, and in Jordan in 1996 during the “bread riots.”¹⁴⁸ Depending on the local “strength of Islamic organizations, the alienation among the masses,” the level of friction between minorities and majorities, and the “rate of social policy changes,” triggered riots may accelerate into civil war or revolution.¹⁴⁹

Migration also can influence international relations among states, which may deteriorate to the point of “interstate warfare.”¹⁵⁰ In a case where the internal migration of an ethnic group leads to settlements in border regions of a neighboring country where a number of the same ethnic group already live, the situation can fuel endeavors to unite and to build their own state. Furthermore, migration may lead to a situation similar to colonization, if borders are permeable and refugees are able to settle down in unoccupied regions in a neighboring country.¹⁵¹ These two stress factors may further contribute to changes in ethnic compositions which again, depending on the number of the refugees and migrants, may increase the risk of encouraging nationalist movements in the host country.¹⁵²

Migration also has the potential to spill over into neighboring countries.¹⁵³ Anticipation of that happening, however, can be used by more aggressive states to pursue their own political interests. Brian Nichiporuk mentioned three of them: preservation of cultural homogeneity, “elimination of politically troublesome groups from the body politics,” and exertion of pressure on neighboring countries.¹⁵⁴

¹⁴⁸ Laurent Murawiec and David Adamson, “Demography and Security,” RAND Conference Proceedings of a Workshop Paris, France November 2000: 13, <http://www.rand.org/publications/CF/CF169/CF169.pdf> (accessed 6 November 2004).

¹⁴⁹ Ibid., 13.

¹⁵⁰ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 37, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

¹⁵¹ Ibid., 37.

¹⁵² Ibid., 37.

¹⁵³ Ibid., 37.

¹⁵⁴ Ibid., 35.

Although these are all domestic security issues, they have the potential to affect the international community in two ways. First of all, the international community may be forced to intervene to prevent further spreading of violence. That, in turn, leads to an “increasing pressure for peace support, humanitarian assistance and disaster relief operations.”¹⁵⁵ On the other hand, countries that are traditional regional allies of “Western states,” may forsake their own support to them, to prevent their own destabilization, or if regional pressure of neighboring countries becomes too strong.¹⁵⁶

¹⁵⁵ British Ministry of Defence, *Defence Policy 2001*, 12 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

¹⁵⁶ Brian Nichiporuk, *The Security Dynamics of Demographic Factors*, RAND Population Matters (2000): 37, <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

THIS PAGE INTENTIONALLY LEFT BLANK

VI. EUROPEAN SECURITY PERCEPTION AND CAPABILITIES

The findings of the previous chapters can be summarized as follows:

With respect to the global trend, societies are aging worldwide, and the overall size of the world population is still growing. The European countries, and here especially France, Great Britain, Germany, and Italy, have either passed the climax point of this development or will pass it in the near future. In other words, these societies are shrinking. In contrast, their neighbors on the southern shores of the Mediterranean Sea and in the Levant are rapidly growing.

Consequently, the problems in the two groups of countries are different, and they have a different impact on security issues. Whereas Europe will face an increasing financial burden in the social welfare budget, a shrinking workforce, and increasing immigration pressure from the Mahgreb countries, the Middle Eastern and North African regions will have to cope with restless young adults, rapidly progressing urbanization, declining natural renewable resources, and the latently present risk of ethnic-, religious-, or socio-economic-triggered riots that may turn into regional conflicts and terrorism.

Although this threat, partly caused by demographic variables, was already present during the Cold War, at that time the European powers were primarily focused on the East-West conflict. After the fall of the Berlin Wall and the end of the Cold War in 1990, however, the problematic developments in the MENA countries began to emerge more and more and to influence European security policy.

From a European perspective, the last 15 years can be divided into three periods. The first period, from 1990 to 1998, was influenced by the belief in a peace dividend and thus a process of force reduction. The second period, from 1998 until 2001, is characterized by the European Kosovo engagement and the resulting new security initiative. The third period represents a watershed in respect to security and can be dated September 11, 2001. This incident and the following war on Afghanistan and Iraq influenced the European security perspective dramatically, as was finally expressed in the European Security Strategy.

One common element of these three periods was the necessity to restructure and adapt the European military forces to the new security environment and to close the capability gap in comparison to the United States. The demographic development in European countries, however, influences this reform and transformation process in two ways. Due to a shrinking workforce, industrialized countries have to replace labor-intensive military forces by forces on a high technological level, whereas at the same time, the demographic trend also leads to higher financial burdens in respect to social welfare expenditures. Consequently, military budgets are under pressure.

In subsequent sections, I outline and discuss the development of the new threat perception and the reaction of NATO and the European Union. To complete this picture, the new requirements are then viewed within the context of the European demographic situation and budgetary constraints.

A. NATO AND THE EUROPEAN UNION FROM 1990 TO 1998

1. From Rome to Madrid

The period between 1990 and 1998 is characterized by the end of the Cold War and the resulting new international security environment and the transformation process of NATO. NATO's new strategic concept, based on dialogue, cooperation, and the "maintenance of a collective defense capability," was hammered out in a series of summits, beginning in November 1991 in Rome.¹⁵⁷ The integral part of this new strategy focused on cooperation and partnership with Central and Eastern Europe. NATO agreed to a

reduced dependence on nuclear weapons and major changes in NATO's integrated military forces, including substantial reductions in their size and readiness, improvements in their mobility, flexibility and adaptability of different contingencies and greater use of multinational formations.¹⁵⁸

To fulfill future requirements for crisis management and peacekeeping missions, NATO started to adapt its command structure. A Declaration on Peace and Cooperation was issued to underline NATO's will to support the transformation process in Central and

¹⁵⁷ NATO Handbook 2001, (Brussels: NATO Office of Information and Press, 2001), 17.

¹⁵⁸ Ibid., 17.

Eastern Europe. The Brussels Summit in January 1994 finally created the Partnership for Peace Initiative, whose goal is to increase and stabilize security throughout Europe.¹⁵⁹ Finally, the Madrid Summit in 1997 proceeded with the process of the “open door policy,” and inviting the Czech Republic, Hungary, and Poland to accession talks. This summit also increased cooperation within the Partnership for Peace Program and started a new era concerning the relationship to Russia. Progress in European Defense Initiative within NATO was achieved, and among others, the dialogue with the Mediterranean countries was intensified.

That dialogue had been initiated at the Brussels Summit in 1994 as a result of the “Alliance’s cooperative approach to security.”¹⁶⁰ Its goal is to contribute to the security and stability of the Mediterranean region, to foster a better mutual understanding, and to correct misperceptions about NATO among the Mediterranean countries. The dialogue is based on a bilateral relation between NATO and participating countries on a case-by-case basis.¹⁶¹ In 1995, first Egypt, Israel, Mauritania, Morocco, and Tunisia joined the dialogue, and then later Jordan and Algeria.

2. From Maastricht to Amsterdam via Madrid

Caused by the breakdown of the Warsaw Pact the immediate external threat of the Cold War disappeared. The European Union, similar to NATO, began to concentrate on partnership programs to foster international security and stabilization, for example the European Mediterranean Partnership, the so-called Madrid Process. A declaration was signed in 1995 by 15 EU member states and 12 non-member states, Mediterranean countries and the Middle East, some of whom were already members of the NATO Mediterranean Dialogue.¹⁶² The European declaration embraces three main goals, similar to those of NATO’s Mediterranean Dialogue. They comprise issues including the creation of a common area of peace and security, economic and financial partnership, and

¹⁵⁹ NATO Handbook 2001, (Brussels: NATO Office of Information and Press, 2001), 67.

¹⁶⁰ Ibid., 91.

¹⁶¹ Ibid., 92.

¹⁶² Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Syria, Tunisia, Turkey, Palestinian Authority.

a social, cultural, and human partnership. Furthermore, it was agreed to “establish a complete free trade area by the year 2010.”¹⁶³

In the aftermath of the Cold War, European heads of state and governments met in Maastricht in 1991 and agreed on the Treaty on the European Union, which replaced a system of several former treaties. After its ratification the treaty came into force in 1993. In addition to the pillars of the *European Community* and of *Justice and Home Affairs*, a third pillar addresses *Common Foreign and Security Policy* (CFSP), which includes the development of a common defense policy that “shall include all questions related to the security of the Union, including the eventual framing of a common defence policy, which might in time lead to a common defence.”¹⁶⁴

Specific types of military instruments and missions were not yet mentioned, and goals such as safeguarding common values, strengthening the security of the Union and its Member States, preserving peace and international security, promoting international cooperation, and developing and consolidating democracy, were still formulated generally.¹⁶⁵

To reach those goals, appropriate missions profiles were defined in 1992 at the WEU summit on the Petersberg near Bonn. The so-called Petersberg Tasks, which embrace humanitarian and rescue tasks, peacekeeping tasks, and combat forces tasks in crisis management, including peacemaking were included in 1997 in the revised Treaty of Amsterdam.¹⁶⁶ Apart from those, defense issues were only touched by claiming that

the policy of the Union in accordance with this Article shall not prejudice the specific character of the security and defence policy of certain Member States and shall respect the obligations of certain Member States, which see their common defence realised in the North Atlantic Treaty

¹⁶³ NATO Handbook 2001, (Brussels: NATO Office of Information and Press, 2001), 92.

¹⁶⁴ Treaty of Maastricht, Article J.4, http://www.uni-mannheim.de/edz/doku/vertrag/engl/m_engl.html (accessed 10 January 2005).

¹⁶⁵ Handbook 2001, (Brussels: NATO Office of Information and Press, 2001), 357.

¹⁶⁶ Treaty of Amsterdam, Article J.7-2, http://europa.eu.int/eur-lex/en/search/treaties_other.html (accessed 10 January 2005).

Organisation (NATO), under the North Atlantic Treaty and be compatible with the common security and defence policy established within that framework.¹⁶⁷

Although the Peterberg Tasks were agreed upon and finally included in the Amsterdam Treaty, the military was not transformed into light, mobile and easily deployable forces to meet the requirements of these new tasks. Instead they remained structured and equipped mostly according to a Cold War conception basis of reduced defense budgets and capabilities.¹⁶⁸

The weakness of this strategy was revealed in 1998 and 1999, when the Kosovo conflict reached its apex and European diplomatic and economic pressure was too weak to end the conflict. Thus it was France and Great Britain who in 1998 proclaimed the Defense Initiative Declaration in St. Mâlo. NATO, also, realized the large military-capability gap that existed between the European allies' forces and the U.S. forces and initiated itself a Defense Capability Initiative (DCI) in April 1999.

B. NATO AND THE EUROPEAN UNION FROM 1998 TO 2001

1. NATO's Capability Gap – The Historical Dimension from 1950 to 1970

Although the Kosovo conflict can be seen as momentum for the initiation of NATO's Defense Capability Initiative, designed to adapt NATO capabilities to the new security environment and to close the capability gap between the United States and the European allies, the question of NATO's capabilities also had a historical dimension.

Already from the early 1950s on, a gap between force "requirements and likely future capabilities" was present. During that period of time the provision of conventional forces was influenced by a Western balance-of-power perception concerning the intentions of the Soviet Union.¹⁶⁹ However, the contribution to NATO's burden-sharing

¹⁶⁷ Treaty of Amsterdam, Article J.7-1, http://europa.eu.int/eur-lex/en/search/treaties_other.html (accessed 10 January 2005).

¹⁶⁸ Joyslyn Mawdley and Gerrad Quille, "Equipping the Rapid Reaction Force: Operations for and Constraints on a European Defence Equipment Strategy," Bonn International Center for Conversion (2003): 8.

¹⁶⁹ John S. Duffield, *Power Rules: The Evolution of NATO's Conventional Force Posture*, (Stanford, CA: Stanford University Press, 1995), 70.

by the different member countries was influenced by several factors. For example, the U.S. engagement in the Korean War received the first priority on military resources. Both the United States and Great Britain reduced their contribution to NATO in favor of their own global interests and due to the necessity of maintaining forces worldwide.¹⁷⁰ France was engaged in Indochina at the time and therefore could not provide promised forces to NATO.¹⁷¹ After the withdrawal of its forces from that theater of war, France immediately engaged in North Africa. Thus, France again had to use its military resources for non-NATO interests.¹⁷²

It was not only foreign engagements that contributed to NATO's increasing capability gap, but also the inability of member states to raise their military expenditures without jeopardizing the European economy and living standards. The main reasons for their reluctant behavior stemmed from the fact that the European economy had not yet recovered completely from World War II; some European governments were still unstable and the integration of West Germany into the West was not yet completed.¹⁷³ So, relying for example on the requirements of the Medium Term Defense Plan (MTDP) for 1954 in the Central Region, this reluctance in defense spending already led in 1954 to a capability gap of 1.3 divisions at D-Day, of 9.6 division at D+30 and of 2.6 Divisions at D+90.¹⁷⁴

Thus the 1954 review of NATO's strategy and the final approval of MC 48 (Massive Retaliation) was therefore not only a result of the availability of tactical nuclear weapons, but were also driven by the need to close the existing gap between force "requirements and the forces the allies were actually willing to and able to provide."¹⁷⁵ This, however, does not mean that conventional resources became superfluous. A U.S.-NATO study came to the conclusion that, to get full advantage of the "large-scale tactical

¹⁷⁰ John S. Duffield, *Power Rules: The Evolution of NATO's Conventional Force Posture*, (Stanford, CA: Stanford University Press, 1995), 72, 110.

¹⁷¹ *Ibid.*, 72.

¹⁷² *Ibid.*, 109.

¹⁷³ *Ibid.*, 71.

¹⁷⁴ *Ibid.*, 48.

¹⁷⁵ *Ibid.*, 77.

use of nuclear weapons,” ground troops would be needed to “exploit the effects of the atomic counterattack before the enemy could recover.”¹⁷⁶ Consequently, the introduction of MC 48 did not really ease the pressure on European military spending: instead, it was expected that new weapons should not replace, but supplement, the old existing systems.¹⁷⁷

Some years later, NATO’s strategy was revised again. This time the change was initiated by Great Britain’s interest in reducing its own forces on the continent. As a result, the MC 14/2 strategy was introduced in May 1957. This strategy like the former relied on the deterrence of a use of nuclear weapons, but recognized the possibility of “limited forms of aggression with conventional forces too.”¹⁷⁸ However, this strategy also failed to relieve budgetary pressure as the British had hoped.¹⁷⁹ Instead, NATO called for a minimum requirement of thirty ready divisions in the Central Region but in 1956 only a maximum of 28.3 divisions, including the 12 of Germany, could be expected.¹⁸⁰

Despite the “increased emphasis on conventional weapons” in the new NATO strategy, the defined requirements with respect to conventional capabilities could not be achieved completely. One reason was the ongoing nuclearization of NATO which stressed the limited financial resources of NATO allies. Similar to Great Britain and France, Germany tried to equip its forces with the “most modern weapons.” From 1957 to 1962, Germany’s procurement expenditures exceeded more than 50 percent for weapon systems such as aircrafts and missiles capable of delivering nuclear weapons.¹⁸¹

Even the MC 14/3 strategy (Flexible Response) that was approved by the North Atlantic Council in 1967 was unable to close the capability gap. Although conventional forces became more important again under this strategy, NATO was not really able to

¹⁷⁶ John S. Duffield, *Power Rules: The Evolution of NATO’s Conventional Force Posture*, (Stanford, CA: Stanford University Press, 1995), 88.

¹⁷⁷ *Ibid.*, 88.

¹⁷⁸ *Ibid.*, 112.

¹⁷⁹ *Ibid.*, 130.

¹⁸⁰ *Ibid.*, 130.

¹⁸¹ *Ibid.*, 144-145.

increase its conventional capabilities. The German contribution due to the completion of its rearmament was almost nullified by the withdrawal of French troops from NATO in 1966 and by the removal of U.S. and British units in 1968.¹⁸² This force reduction on the Continent was a consequence of the trilateral negotiations between the United States, Great Britain, and Germany, which were mainly about the German financial contribution to the “annual foreign exchange costs” to maintain British and U.S. forces in Germany.¹⁸³ However, as a consequence of the outcome of those negotiations, other countries, like Belgium and even Germany, tried to obtain budgetary relief through “cuts of their own.”¹⁸⁴

In sum, it can be argued that during the twenty-year period from 1950 to 1970, the main reasons for the capability gap between NATO’s requirements and the actual availability of its forces were the differing viewpoints about the requirements of deterrence and the balance of conventional forces. Whereas the United States emphasized the importance of appropriate responses to aggression and therefore focused more on the contribution of conventional forces, the European allies wanted to rely more on tactical nuclear weapons due to financial concerns. Concerning the question of the balance-of-power, the Europeans argued that it was not possible to counterbalance the conventional forces of the Warsaw Pact.¹⁸⁵

As I outlined in broad terms above, the struggle within NATO about capabilities did not emerge in the late 1990s for the first time. This problem had accompanied NATO from the very beginning. Consequently, NATO’s attempt to close the capability gap by the introduction of the Defense Capability Initiative was just the continuation of an already existing pattern.

¹⁸² John S. Duffield, *Power Rules: The Evolution of NATO’s Conventional Force Posture*, (Stanford, CA: Stanford University Press, 1995), 152.

¹⁸³ *Ibid.*, 177.

¹⁸⁴ *Ibid.*, 187.

¹⁸⁵ *Ibid.*, 191.

2. The Washington Summit and NATO's Defense Capability Initiative

During the war on Kosovo, the military capability gap between the United States and the European allies became more than obvious. Especially noticeable was the lack of all-weather precision-bombing capabilities, allied intelligence collection, air- and ground-surveillance communication technologies, airlift strategies, and stealth capabilities. So at the NATO summit in Washington in April 1999, NATO's 50th anniversary, they launched the Defense Capability Initiative (DCI) "to ensure that all Allies not only remain interoperable, but that they also improve and update their capabilities to face the new security challenges."¹⁸⁶

The initiative covers "almost all areas of military capabilities."¹⁸⁷ Its main focus, however, is the improvement of capabilities concerning mobility and deployability, sustainability, effective engagement, survivability, and interoperable communications.

In addition, NATO's Defense Capability Initiative is designed to contribute to the strengthening of European defense capabilities, in order to foster the development of the European Security and Defense Identity (ESDI).

3. From St. Mâlo to Nice

In October 1997, with the Treaty of Amsterdam, signed by the European foreign ministers of the European Union's 15 member states, Europe introduced a broader security agenda, which now is focused not only on the European or NATO territory, but also goes beyond those borders. On November 23, 1998, one week before the Franco-Anglican declaration of St. Mâlo, the former German minister of defense, Rudolf Scharping, stated in a speech, "Meeting the Challenges of the Future – Germany's Contribution to Peace and Security in and for Europe," given at the Center for Strategic and International Studies:

There is a band of instability running from the Balkans across the Mediterranean to North Africa and the Middle East. Security is indivisible. The spread of weapons of mass destruction and international terrorism, international instabilities caused by a mixture of socio-economic and

¹⁸⁶ NATO Handbook 2001, (Brussels: NATO Office of Information and Press, 2001), 51.

¹⁸⁷ Ibid., 51.

political imbalances and political fundamentalism could very well lead to a crisis requiring action on our part. These risks are unlikely to decline over the next few years.¹⁸⁸

Furthermore, also before the St. Mâlo Summit, the British government had published a White Paper on defense, in July 1998. Here already at the national level, new emerging threats were pointed out, and the necessity of force transformation was emphasized.

For the last two hundred years, the dominant force in international affairs has been the nation state. Most wars have been caused by attempts to create or expand such states. In contrast, over the next twenty years, the risks to international stability seem as likely to come from other factors: ethnic and religious conflict; population and environmental pressures; competition for scarce resources; drugs, terrorism and crime.

These pressures operate both within states and across borders. The break-up of states seems likely to be as much a security problem as traditional expansionism, although Saddam Hussein provides a powerful reminder that this should not be ruled out. Moreover, the consequences of initially local crises may spread dramatically in an ever more interdependent world.¹⁸⁹

In December 1998, still under the impression of the Balkan conflict, Great Britain and France brought the Treaty of Amsterdam, and with it, the common defense policy in the framework of the Common Foreign and Security Policy (CFSP), one step farther, by their *Joint Declaration* of St. Mâlo. The declaration states, “the Union must have the capacity for autonomous action, backed up by credible military forces, the means to decide to use them, and a readiness to do so, in order to respond to international crises.”¹⁹⁰

¹⁸⁸ Rudolf Scharping, German minister of defense, “Meeting the Challenges of the Future – Germany’s Contribution to Peace and Security in and for Europe,” speech at the Center for Strategic and International Studies, November 23, 1998, in Daniel Gouré, “International Security and the Aging Crisis: A White Paper on Defense and the Global Aging Initiative,” CSIS (December 2000): 37.

¹⁸⁹ Secretary of State for Defence by Command of Her Majesty, *Strategic Defense Review - White Paper*, July 1998, <http://www.mod.uk/issues/sdr/index.htm> (accessed 25 February 2005).

¹⁹⁰ British-French Summit St-Mâlo, 3-4 December 1998, in *From St-Mâlo to Nice: European defence: core documents*, compiled by Maartje Rutten, <http://www.iss-eu.org/chaillot/chai47e.html#3> (accessed 25 February 2005).

By this document, Great Britain agreed to defense actions outside the NATO framework. For France also it was a novelty, for France's primary goal so far was to use its forces only on a "strictly national basis."¹⁹¹ The Franco-Anglican approach was adopted by other European countries in 1999 at the European Council Summit in Cologne. There the member states agreed that the EU should procure the capabilities necessary to conduct military crisis-management operations according to the Petersberg missions, either in the context of NATO or independent of the Alliance. Furthermore, the "implementation of the necessary adaptations and notably the reinforcement of our capabilities in the field of intelligence, strategic transport, command and control" was stipulated.¹⁹²

Finally, in 2000, the European member states passed the Helsinki Headline Goal at the European Council Summit by which the member states committed firmly to voluntary cooperation in EU-led operations. In addition, the member states committed themselves to implementing European Rapid Reaction Forces (RRF), to be used only to support the Petersberg missions. Thus, the different member states had to be able, by 2003, to deploy military forces of a scale up to 50,000 to 60,000 within sixty days for a period of at least one year.

In the end, the European Union decided to establish the Political and Security Committee, the Military Committee of the European Union, and the Military Staff of the European Union as new parliamentary and military bodies, to fulfill the new responsibilities of the Nice European Council Summit in 2000.¹⁹³

¹⁹¹ Jean-Paul Béchat and Felix G. Rohatyn, "The Future of the Transatlantic Defense Community," Final Report of the CSIS Commission on Transatlantic Security and Industrial Cooperation in the Twenty-first Century, The CSIS Press (January 2003): 6.

¹⁹² Declaration of the European Council on strengthening the common European policy on security and defence, Press Release: Brussels (03-06-1999) - Nr. 122/99, http://www.basicint.org/europe/ESDP/0699-PR_EUdefpol.htm (accessed 27 February 2005).

¹⁹³ European Union, "Presidency Report on the European Security and Defense Policy," 13 December 2000, http://ue.eu.int/ueDocs/cms_Data/docs/pressdata/en/misc/14056-r3.en0.html (accessed 25 February 2005).

Although Europe was proceeding toward a common security and defense policy, this project became of much higher importance and momentum with the events of September 11, 2001.

C. NATO AND THE EUROPEAN UNION FROM 2001 TO 2004

1. NATO Prague Summit, November 2002

Until 2001, the transformation process, especially the Defense Capability Initiative, was still driven by the impressions of the Kosovo conflict. However, since September 11, it suddenly became obvious that it is not only NATO or the EU that decides where, when, and how to react to threats. The Western World in total is vulnerable to the new threat of terrorism. So after the attacks against the United States, for the first time in its history, NATO invoked Article 5. Triggered by these events, NATO's foreign and defense ministers decided three months later that new ways have to be examined, to adapt NATO capabilities to react to this new threat.¹⁹⁴

At the NATO summit in Prague in November 2002, the member countries committed themselves to create a NATO Response Force (NRF), to streamline NATO's military command arrangements, and to approve the Prague Capabilities Commitment (PCC).¹⁹⁵

Concerning the PCC, NATO member countries made firm political commitments to improve NATO's capabilities in more than 400 areas, covering chemical, biological, radiological, and nuclear defense; intelligence, surveillance, and target acquisition; air-to-ground surveillance; command, control, and communications; combat effectiveness including precision-guided ammunition and suppression of enemy air defense; strategic air- and sea-lift, air-to-air refueling and deployable combat support and combat services support units as well.¹⁹⁶

¹⁹⁴ NATO, *New Threats and Challenges 2002*, http://www.nato.int/docu/comm/2002/0211-prague/in_focus/terrorism/index.htm (accessed 25 February 2005).

¹⁹⁵ NATO, Prague Summit Declaration, Press Release (2002)127 21 Nov. 2002, <http://www.nato.int/docu/pr/2002/p02-127e.htm> (accessed 25 February 2005).

¹⁹⁶ Ibid.

Furthermore, at this summit, NATO once again reaffirmed that “security in Europe is closely linked to security and stability in the Mediterranean.”¹⁹⁷ It is explicitly emphasized that the Mediterranean Dialogue is an “integral part of the Alliance’s cooperative approach to security,” and “that the Mediterranean Dialogue and other international efforts, including the EU Barcelona process, are complementary and mutually reinforcing.”¹⁹⁸

2. From the Capabilities Commitments Conference to the European Security Strategy

Parallel to NATO, the European countries forwarded their efforts in reinforcing military capabilities and identifying shortcomings within the Capability Commitments Conference (CCC). At the Capability Improvement Conference (CIC) in 2001, the European member states identified additional shortcomings, including areas such as force protection and logistics and operational mobility, and “agreed upon a plan of action to remedy them.”¹⁹⁹

However, the most important step was the development of the European Security Strategy and its setting into force in December 2004. In contrast to the treaties mentioned so far, the European Union member states addressed very clearly their threat perception, their strategic objectives, and their applied policies. Thus, as main threats, the European Union identified terrorism, the proliferation of weapons of mass destruction, failed states, organized crime, and regional conflicts. As a key strategic objective, the resolution of the Israel-Arab conflict was addressed and, in that context, the members decided that a broader engagement with the Arab world should be considered. More generally, they addressed the Mediterranean area as a region that “undergoes serious problems of

¹⁹⁷ NATO, Prague Summit Declaration, Press Release (2002)127 21 Nov. 2002, <http://www.nato.int/docu/pr/2002/p02-127e.htm> (accessed 25 February 2005).

¹⁹⁸Ibid.

¹⁹⁹ Gustav Lindstrom, “The Headline Goal, (updated December 2004)”: 3, <http://www.iss-eu.org/esdp/05-gl.pdf> (accessed 25 February 2005).

economic stagnation, social unrest and unresolved conflicts.”²⁰⁰ The strategy proclaims that this area “requires a continued engagement” through “more effective economic, security and cultural cooperation.”²⁰¹

However, in addition, the European Union also stated very clearly that, in order to deal with terrorism, failed states, or regional conflicts, political, economic, humanitarian, and juridical means may not be sufficient, and means like intelligence, police, or even military assets may be needed in order to resolve regional conflicts.²⁰² Moreover, the European Security Strategy underlines the importance of the development of a strategic culture, to foster “early, rapid, and when necessary robust intervention.”²⁰³ In this context, the European security Strategy further proclaims that

we need to be able to act before countries around us deteriorate, when signs of proliferation are detected, and before humanitarian emergencies arise. Preventive engagement can avoid more serious problems in the future.²⁰⁴

D. A SUMMARY AND THE BUDGET QUESTION

After having outlined the development of NATO’s and Europe’s security policy, their threat perception, and their initiated defense capability efforts over the last 15 years, one can realize that NATO and the European Union security interests were first focused on Central and Eastern Europe, to help and support the former states of the Warsaw Pact region. Their attention then shifted more and more toward the Mediterranean region and the Middle East. These regions were covered more intensively from the mid-1990s on by NATO’s Mediterranean Dialogue and the European Madrid Process. This period of time was characterized further by strong military budget cuts and force reductions, without, however, approaching the necessary transformation of the forces to meet the new tasks.

²⁰⁰ European Union, Council of the European Union, *European Security Strategy*, Brussels, 8 December 2003, <http://register.consilium.eu.int/pdf/en/03/st15/st15895.en03.pdf> (accessed 20 February 2005).

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Ibid.

²⁰⁴ Ibid.

That reluctance became sharply evident during the Kosovo crisis in comparison to U.S. capabilities. After 9/11, the Middle East and North Africa became the main focus of NATO's and the European Union's security and stability interests. However, similar to the Balkan conflict, the capability gap is still present, though Europe is working hard to catch up and meet the requirements defined in the DCI and the ESDI. The German Ministry of Defense describes these goals in great detail in *The Bundeswehr 2002: The Current Situation and Perspective* stating that

one trademark of the ESDP is the parallel and balanced build-up of civil and military forces and capabilities. [...] It [ESDP] provides for the EU to raise a military rapid reaction force.²⁰⁵

Furthermore, the German ministry of defense pointed out in the *Defense Policy Guidelines* of May 2003 that

the Bundeswehr is being further developed with the intension of achieving a balance between its mission, tasks, equipment and resources. In view of the changed security situation, the tasks of the Bundeswehr will be reprioritized. Its capabilities will be adapted accordingly. In future, financial resources will be used mainly for the provision of the military core capabilities.²⁰⁶

Similar to Germany, Great Britain describes its obligations towards NATO as follows:

In NATO our guiding objective is to play a leading role in modernization and adapting the Alliance, both militarily and politically, so that it can respond as effectively to new security challenges [...]. In particular, we will promote improved capabilities, and a stronger European military contribution, particularly of deployable, mobile, sustainable forces now needed for both Article 5 and non-Article 5 operations. Immediate priority areas are NATO's Defense Capabilities Initiative and its Force Structure Review.²⁰⁷

And in respect to the European Union, Great Britain's Defense Policy 2001 claims that

²⁰⁵ Bundesministerium der Verteidigung, "The Bundeswehr in 2002: The Current Situation and Perspectives," (April 8, 2002): 17.

²⁰⁶ Bundesministerium der Verteidigung, "Defence Policy Guidelines," (May 21, 2003): 5.

²⁰⁷ British Ministry of Defence, *Defence Policy 2001: Policy Priorities Issue 18*: 21, November 2001 <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

[the] central defense objective is to develop improved European military capabilities allowing the EU to undertake military crisis response operations in support of the Common Foreign and Security Policy where NATO as a whole is not engaged.²⁰⁸

France, too, stresses its obligation to contribute to the defense efforts of the international community, by laying down its Defense Overview. This document states:

[France] must also be able to act on a national, or possibly multinational, basis to defend national interests under threat, or to implement defense agreements signed with allies, in Africa or in the Middle East. Thirdly, action within the framework of the North Atlantic Alliance or of the Western European Union must be envisaged less in terms of a threat of the type posed for a long time by the USSR, than in terms of regional conflicts involving our obligations under the terms of treaties. [...] it is essential for our country to have the necessary military means to conduct strictly national actions to a certain level of intensity. At the same time, it must have the necessary means to project expeditionary forces and to provide the corresponding theater joint-services command resources, which must be able to work with our allies.²⁰⁹

Although these goals, as shown above by the example of select states, are acknowledged by all European Union members and formulated and transcribed in national defense documents, the question of how to maintain budgetary pressures caused by “demographic trends, in terms both of pressure on tax revenue and greater demands on health and social security spending” still exists.²¹⁰ For example, a RAND study, published in 2001, tried to set up a framework to calculate a dimension of the “preliminary cost estimations,” as cost estimates for ESDP and the European Rapid Reaction Forces are not officially published so far by NATO and the EU.²¹¹

²⁰⁸ British Ministry of Defence, *Defence Policy 2001: Policy Priorities Issue 19*: 21, November 2001 <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

²⁰⁹ Embassy of France in the U.S., “Capabilities of the French Forces,” *French Defense Overview*, <http://www.info-france-usa.org/intheus/defense/defense.asp>.

²¹⁰ UK Ministry of Defense, *Defence Policy 2001, Issue 39*, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 07 November 2004).

²¹¹ Charles Wolf, Jr. and Benjamin Zycher, “European Military Prospects, Economic Constraints and the Rapid Reaction Forces,” RAND 1416 (2001): 25.

In addition to a top-down approach, based on estimated “annual military expenditure per U.S. soldier for new military investment and RDT&E,” and a bottom-up approach, by which cost estimations are based on the major system components that are “presumed to be necessary to achieve the targeted military capabilities,” the RAND authors used the structure of a U.S. Marine brigade and a U.S. Army assault division as possible “building blocs” and as models for cost estimations respectively.²¹² To simplify the model, the authors considered only costs representing military investment.

The conclusion reached by the RAND study was that the estimated necessary capital costs for ESDP are between \$24 billion and \$56 billion (in real prices of 2000), depending on the model used.²¹³

In addition to the financial aspect of financing the military requirements of the new security environment, the British Defense Policy discusses the question with the realm of demography, so it notices that,

more than ever, recruiting, retaining and motivating sufficient high-quality people will be critical. Demographic and social factors, particularly the aging of the British population, will make this more difficult. It will become increasingly important to maintain the widest possible recruiting pool as well as meeting the increasing expectations of civilian and Service personnel and their families. Pressure to reduce manpower requirements will intensify, and manpower requirements will become a far more significant factor in decisions on equipment procurement and force structures.²¹⁴

And it notes further that “the Armed Forces must ensure that they can attract recruits from all groups within the reducing recruitment pool.”²¹⁵

²¹² Charles Wolf, Jr. and Benjamin Zycher, “European Military Prospects, Economic Constraints and the Rapid Reaction Forces,” RAND 1416 (2001): 26-27.

²¹³ Ibid., 32.

²¹⁴ UK Ministry of Defense, *Defense Policy 2001, Issue 14*, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 07 November 2004).

²¹⁵ Ibid., Issue 18.

In the following chapter, I discuss in more detail the military expenditures of France, Germany, Italy, and Great Britain, and their future prospects. In doing so, I also consider the future demographic development and, consequently, the resulting prognostications of future social welfare costs and future economic development.

VII. THE EUROPEAN ARMED FORCES UNDER FINANCIAL AND SOCIO-POLITICAL CONSTRAINTS

In the previous chapter, I described the shift in NATO's and the European Union's regional focus and threat perceptions. Alerted by the Kosovo crisis in 1999, Europe realized that its forces were not prepared to meet the challenges of the new security environment. Although since then Europe has made good progress in the political arena concerning security issues, the defined ambitious requirements needed to improve Europe's military capabilities are difficult to realize in times of low economic growth and tense budgets.

However, it is not only the transformation process that stresses Europe's military budgets, but also the ongoing replacement of weapon systems introduced into the forces in the 1970s and 1980s that contributes to this problem. For example, all major European countries introduced a modern generation of aircraft represented by the Eurofighter, Tiger, NH 90 and A-400M. This has already generated a problem for the future. In 25 to 30 years, "when the peak of the aging problem occurs" and public budgets are assumed to be stressed by high social welfare expenditures, this generation of weapon systems will need to be replaced again.²¹⁶ As replacement costs for combat aircraft in real terms are expected to double over a period of twelve to fifteen years, the price increase also has to be taken into account.²¹⁷

An additional aspect that may influence future military budgets, and thus has to be considered, is the impact of aging on the economy. Taking the predicted demographic development of the European countries for granted, it is fair to assume that, due to an increase of elderly people by declining birth rates and increasing life expectancy, the old-age dependency ratio will increase. Consequently, this trend will lead to a reduction of the workforce. But labor supply is not the only channel by which aging influences the

²¹⁶ Axel H. Boersch-Supan and Joachim K. Winter, "Population Aging, Savings Behavior and Capital Markets," *National Bureau of Economic Research* (December 2001): 9, <http://www.nber.org/papers/w8561> (accessed 6 November 2004).

²¹⁷ Daniel Gouré, "International Security and the Aging Crisis." *CSIS International Security Program* (December 2000): 9, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

economy. Demographers have yet to examine the extent to which public and private saving practices or the total factor productivity will be able to compensate for the influence of a shrinking workforce.

This chapter outlines the areas of tension between military requirements and social necessities, and shows that, due to raising social expenditures, there is less leeway for a future increase of military expenditures. It will discuss the budgetary situation concerning expenditures related to the social systems in France, Germany, Italy, and the United Kingdom. But first, the influence of aging on the economy and the future economic growth potential has to be discussed. Although, liabilities caused by National Debt are not age-related, they are considered in this discussion as well, because they will have a major impact on future public spending. In the second section this chapter outlines the development of defense expenditures and their distribution by categories.

A. DEMOGRAPHIC INFLUENCE ON THE ECONOMIC DEVELOPMENT IN EUROPE AND ON THE SOCIAL SYSTEM

1. The Impact of Aging on the Economy

Guided by the UN long-term, medium-variant population projection, organizations like the IMF, OECD, and the EU assume a future decline of labor force in combination with an increase of the old-age dependency ratio, which, in sum, will have a considerable impact on future economic growth development. Since the 1990s, all three institutions have begun to develop economic growth simulation models. The IMF presented the first results in 1990, calculated by means of their simulation tool *Multimod*, followed by the OECD projection, based on the results of their *Minilink* model, in 1998. Finally in 1999, the directorate-general for economic and financial affairs of the European Commission (ECFIN) introduced their *Quest II* approach.²¹⁸ To give a clear understanding of the underlying assumptions and initial values used for the ensuing projections, I first outline the basic assumptions and results of the *Quest II* approach.

²¹⁸ Kieran McMorow and Werner Roeger, "The Economic Consequences of Aging Populations: A Comparison of the EU, US and Japan," *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 138 (1999): 2.

a. Age-related Economic Transmission Mechanics

From an economic point of view, aging is assumed to affect the economic growth potential by the following mechanics:

expenditure pressures on the public finances; “life cycle” effects on private savings behaviors, as well as Ricardian equivalence effects operation through the deterioration in public savings; labor supply implications, potential impact on capital accumulation; effects on total factor productivity and finally the equilibrating role of interest rates and exchange rates and shifts of external balances.²¹⁹

Assuming a partial-equilibrium approach, these transmission mechanics and the way they are supposed to work, are briefly outlined in the following section.

As already mentioned several times, public expenditures related to social welfare are expected to increase in the next decades due to an increasing old-age dependency ratio. Whereas, for example, in France 2.6 workers in 2005 have to support one pensioner, in 2050, this will be done by only 1.4 workers. Italy is the other end of the scale: there the old-age dependency ratio will increase from 0.45 to 1.0 during the same period of time. Bearing this in mind, the projected increase of the social welfare-related spending is even more likely, as since 1970, the increase of pension and health care expenditures “has accounted for nearly two-thirds of the increase in the total governmental expenditure to GDP ratio in the EU.”²²⁰

A further economic aspect of aging is people’s saving behavior. With respect to life-cycle models, savings are expected to be high if many people are employed. It is assumed that those savings will then build up reserves for post-retirement consumption. Consequently, it is also assumed that the saving rate will be low if a high portion of the population does not work, either because they are too young or because they already have passed the retirement age. The problem with this model is that, on the one hand, as empirical evidence exists, scholars agree upon the link between aging and saving rates, but, on the other hand they disagree on how strong that correlation is. As a

²¹⁹ Kieran McMorrow and Werner Roeger, “Economic and Financial Market Consequences of Aging Populations,” *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 182, (April 2003): 12.

²²⁰ *Ibid.*, 14.

result of an aggregation of several studies from 1970 to 2000, the private saving rate is projected to decrease by 0.75 percent per 1 percent increase in the old-age dependency ratio.²²¹

The economists Kieran McMorrow and Werner Roeger include another factor as a possible transmission channel: the impact of capital accumulation. They examine the influence of capital accumulation on future living standards, arguing that savings lead to productive investments and a “stronger long-run growth.” McMorrow and Roeger come to the conclusion, however, that it is more likely, due to future demographic development that national savings will decline. Consequently, national savings have to be increased to compensate for age-related effects.²²² Furthermore, they point out that savings and investments not only influence the potential economic growth, but also have an impact on interest rates, exchange rates, and the balance of power. This means in general terms that in the case of a worldwide imbalance of savings and investments, interest rates may come under pressure.²²³

As a consequence of an increasing number of pensioners, the financial burden of social welfare costs will have to be distributed on fewer shoulders. These costs, however, assuming a no-change policy, can only be covered by an increase of taxes or of benefit contributions. Hence, the burden may lead to labor disincentives.²²⁴

A further critical point in setting up economic simulation models is the assumption of the extent to which an increase of productivity may compensate for a decline in the workforce. According to McMorrow and Roeger, no convincing empirical evidence has been found so far. Thus they suggest “to take a neutral position with regard

²²¹ Kieran McMorrow and Werner Roeger, “Economic and Financial Market Consequences of Aging Populations,” *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 182, (April 2003): 12-13.

²²² *Ibid.*, 13.

²²³ *Ibid.*, 16.

²²⁴ *Ibid.*, 13.

to future technical progress.” Consequently, they assume that the average rate of change of the technical progress in the last 10 years will remain the same in the next 50 years, too.²²⁵

b. Key Variable of the Quest II Approach

Although the different age-related economic parameters were discussed under the assumption of a partial equilibrium – that is, they were discussed isolated from one another and a mutual influence was consequently neglected – the Quest II simulation uses a general equilibrium approach. By doing so, major obstacles can be overcome: using the general approach, policy adjustments can be included. Furthermore, the related feedback of economies like, for example, changes in exchange rates, interest rates, saving behavior, or investments caused by political induced reforms can also be considered. Finally, global interdependencies have to be taken into account as well, as aging does not take place at the same rate and speed in all world regions.²²⁶

Within this global approach, the European simulation model considers four variables, namely: household behavior, labor supply, production/technical progress, and government.

For household behavior, the authors applied the equations of the Life Cycle Hypothesis. The labor-supply side is modeled by using a modified wage equation, based on the standard neo-classical labor-supply model. This equation not only includes the consumption of leisure time, but also elements borrowed from wage equations formulated in the “bargaining literature.” Production and technical progress are modeled by using the CES (Constant Elasticity of Substitution) and Cobb Douglas production function, and firms are assumed to operate in a monopolistically competitive environment.²²⁷ Finally, the government expenditures are represented by using the following accounts:

²²⁵ Kieran McMorow and Werner Roeger, “Economic and Financial Market Consequences of Aging Populations,” *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 182, (April 2003): 16.

²²⁶ *Ibid.*, 30.

²²⁷ *Ibid.*, 32.

interest payments on government debts, purchase of goods and services, government employment, net government transfer to households, net of unemployment benefits, and other transfers.²²⁸

All government expenditures are assumed to be financed by labor income tax and social security contributions. Further income sources are “corporate income taxes, energy taxes, value added tax and others receipts.”²²⁹

c. Central Aging Scenario and Results

The simulation of *Quest II* starts from a baseline scenario. This condition of equilibrium is disturbed by two major age-related shocks. The first one is a labor-force shock that considers the future demographic development over a period of 50 years; the second shock refers to public expenditures, related to expenditure increases of pensions, health care, and education. However, in order to avoid infinitely raising debts and interest payments, the requirements of the European Stability and Growth Pact are assumed as strictly redeemed. Furthermore, all necessary “public expenditure increases” caused by age-related effects are assumed as “100% tax financed.”²³⁰ Finally, the simulation concerning the future European economic growth potential led to the results explained next:

Regarding the living standard of the 15 EU countries, the *Quest II* projection predicts an average GDP per capita growth rate of -0.4 percent per annum. Cumulated over the period from 2000 to 2050, this annual decline reduces the GDP per capita level by 19 percent, compared to the baseline scenario. After analyzing the decomposed result, one can see that the driving factors for the declining GDP per capita growth rate are the impact of aging on productivity and on the development of the dependency ratio.

²²⁸ Kieran McMorow and Werner Roeger, “Economic and Financial Market Consequences of Aging Populations,” *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 182, (April 2003): 33.

²²⁹ *Ibid.*, 33.

²³⁰ *Ibid.*, 48.

With respect to the total GDP development itself, *Quest II* prognosticates an average fall of the annual GDP growth rate of 0.8 percent for the same period of time. Based on the data available in 2000 and the average GDP growth rate during the 1990s, this index is estimated to drop from 1.94 percent to 1.3 percent in absolute terms.²³¹

In the introduction to this chapter, two further simulation models were mentioned. Those however, are not discussed in the same detail as is the case regarding the *Quest II* approach. The underlying reason for this is the fact that the core of those models also is the Life Cycle Hypothesis, and therefore they deliver similar results. Consequently, in the following projection of future public spending in France, Germany, Italy, and the United Kingdom I use the data provided by *Quest II* as initial values.

2. Future Economic Development of European Countries

There is a declining population growth rate, caused by falling birth rates and an increase in life expectancy, in European countries. By decomposing the UN long-term, medium-variant population projection, which is used throughout this thesis, with respect to the working age-related population cohort, one can observe that future generations will consist of a much smaller labor force. In the period from 2005 to 2050, the French workforce is estimated to shrink by 10.1 percent, the German workforce by 20.9 percent and, in Italy and the United Kingdom, by 41.5 percent and 12.4 percent respectively.²³²

As is shown by the *Quest II* approach, this situation is assumed to influence the potential future economic growth and lead to falling annual GDP growth rates. However, as the complete data set for the French, German, Italian, and British economic development is not published in the cited research reports, I recalculated this development, using my own simplified assumptions and the annual average GDP growth rates of *Quest II* as initial values. In the first step, IMF data are used to calculate the average economic growth rates of the four countries individually over a 15 year period

²³¹ Kieran McMorrow and Werner Roeger, "The Economic Consequences of Aging Populations: A Comparison of the EU, US and Japan," *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No 138 (1999): 49-50.

²³² Data were compiled based on the UN World Population Prospects: *The 2002 Revision Population Database*, see Table 1.

starting in 1990. Finally, on this set of data, I apply the *Quest II* results. This leads to the course of economic growth illustrated in Table 5 and Figure 19.

GDP growth rate [%]	France	Germany	Italy	Great Britain
2005	1.8	1.6	1.4	2.4
2050	1.1	1.3	1	1.7

Table 5. Future GDP Growth Rates

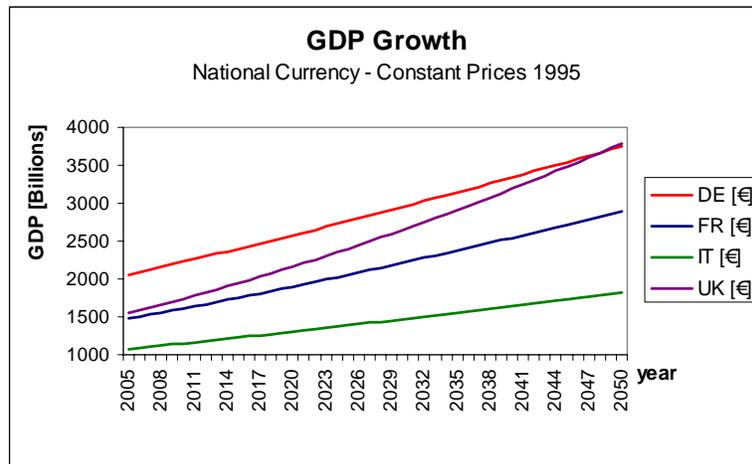


Figure 19. EU 4 Real GDP Growth in 1995 Prices

Although the GDP growth rates as shown in Table 5 are on a declining trajectory in all four countries, the different economies are slightly growing. Among the four countries, Great Britain experiences the highest growth rates. This trend however, may result from different reasons. Although the British economy underwent several changes in its history, with the most relevant ones beginning in the years after World War II until the end of the Maggie Thatcher era in 1990, Great Britain represents one of the most liberal economies in Europe. Furthermore, the public budget is less constrained by pension payments, because the British system provides only a government-financed minimum retirement income. British citizens are expected to obtain the remainder of

their pension payments from other means, such as private occupational pensions.²³³ Another reason may be that the general gross debt, expressed as a share of GDP (39.9 percent in 2004), is by far the lowest among the countries compared in this case study. Finally, the future reduction of the British workforce is also one of the lowest. Hence, the economic development outlined above provides a framework for the projection of future social-benefit expenditures and the financial leeway of other budgets.

3. Future Development of Social Expenditures

a. General Definitions

In the previous section, I presented the general economic situation. In this section, I lay out the future development of social expenditures. However, some explanatory definitions have to be introduced first.

In general, social expenditures are provided not only by the central government, but also by all public levels. Consequently, expenditures made by “State, Regional and Local Government bodies” and “social security schemes” have to be considered.²³⁴

In this case study, however, the expression *social expenditure* used is a slightly modified version. In addition to public spending related to pensions, health care, and long-term care, it embraces unemployment benefits and expenditures for education. Long-term care however, is not discussed in this thesis in detail, as no figures for Germany are given and long-term care’s share of GDP in the other three countries is below 1 percent, even in the year 2050.²³⁵

Finally, the term *health expenditure* used is the definition given by the OECD System of Health Accounts and is outlined in detail in Chapter II.²³⁶

²³³ Economic Policy Committee (EPC), *The impact of aging on public finances: overview of analysis carried out at EU level and proposals for a future work programme*, 2003: 22.

²³⁴ Ibid., 100.

²³⁵ Ibid., 25.

²³⁶ Economic Policy Committee (EPC), *Budgetary challenges posed by aging populations: the impact on public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances*, 2001: 100.

b. The Development of Future Public Expenditures on Pensions

The common problem of France, Germany, and Italy is that their pension systems are a taxed-based pay-as-you-go system. This means that workers' contributions are not saved for their future retirement payments, but instead are used to pay the present generation of pensioners. The pensions of the present generation of workers have then to be paid, in turn, by the next generation.²³⁷ Consequently, the pension-related expenditures are directly linked to the impact of demographic development and, subsequently to economic development as well.

In light of the future demographic projections, the Aging Working Group (AWG) of the European Union's Economic Policy Committee examined closely the impact of aging on the pension system. Although pension reforms initiated in Germany in 2001 and in France in 2003 are included in the AWG calculations, spending on public pensions as a share of GDP is still growing. The only country that will experience a fall in public pension payments is Great Britain. Another interesting point is that, although Italy is the country with the highest shrinkage of its workforce, its public-pension spending will increase by two percent over the next twenty-five years and will peak in 2030. Thereafter, pension related-expenditures will fall again and level out only 0.3 percent higher than the level in 2005.²³⁸

Pension [%]	2005	2010	2020	2030	2040	2050	change [%]
FR	12.30	13.10	14.30	15.00	14.70		2.40
DE	10.80	11.10	12.10	13.80	14.40	14.90	4.10
IT	13.80	13.90	14.80	15.70	15.70	14.10	0.30
UK	5.30	5.10	4.90	5.20	5.00	4.40	-0.90

Table 6. Projection for Spending on Public Pensions as a Share of GDP, Current Policy Scenario

(After) Economic Policy Committee (2001) and Economic Policy Committee (2003)

²³⁷, Herwig Birg, "Demographic Aging and Population Decline in 21st Century Germany - Consequences for the Systems of Social Insurance," *Expert Group Meeting on Policy Responses to Population Aging and Population Decline, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York, 16-18 October 2000*: 11.

²³⁸ With respect to the Economic Policy Committee, the pension related data for France are given only until the year 2040.

Although, the total increase of public-pension expenditures appears relatively moderate over the next 45 years, the situation looks totally different in absolute terms. Based on the GDP development laid out above, the absolute increase in real terms ranges from approximately 172 percent up to almost 250 percent compared to the payments of 2005.

Pension [€]	2005	2010	2020	2030	2040	2050	change [%]
FR	181.88	211.34	271.84	331.81	374.02		205.64
DE	222.71	247.34	312.02	407.22	481.26	558.63	250.83
IT	148.20	159.76	193.31	230.77	257.35	255.59	172.46
UK	82.12	88.73	106.04	137.66	159.45	166.69	202.98

Table 7. Projection for Spending on Public Pensions in Constant Prices of 1995, Current Policy Scenario

(After) Economic Policy Committee (2001) and Economic Policy Committee (2003)

c. The Development of Future Public Expenditures on Health Care

In regard to the development of future health-care expenditures, the overall situation looks similar to that of future pension payments. Depending on the country, the AWG estimates an increase of public spending on health care between 1.4 percent and 2.1 percent over the period from 2000 to 2050. So in 2050, total health-care expenditures cumulate between 6.0 percent and 8.1 percent of the GDP. The data for the years 2005 et sequentes, as illustrated in Table 8, are calculated on values published by the Economic Policy Committee.

Health-care [%]	2005	2010	2020	2030	2040	2050	change [%]
FR	6.37	6.54	6.40	7.28	7.68	8.10	1.73
DE	5.88	6.07	6.46	6.88	7.33	7.80	1.92
IT	5.05	5.20	5.52	5.86	6.22	6.60	1.55
UK	4.72	4.85	5.12	5.40	5.69	6.00	1.28

Table 8. Projection for Spending on Health Care as a Share of GDP, Current Policy Scenario

(After) Economic Policy Committee (2001) and Economic Policy Committee (2003)

Although the overall increase of health-care expenditures seems to be relatively moderate, a picture similar to that of public-pension spending is obtained. The overall increase of health-care payments, expressed in constant prices of 1995, doubles or triples with respect to a 2005 baseline.

Health-care [€]	2005	2010	2020	2030	2040	2050	change [%]
FR	94.16	105.51	131.16	161.01	195.36	234.52	249.07
DE	121.29	135.24	166.63	203.03	244.83	292.44	241.11
IT	54.21	59.78	72.10	86.12	101.93	119.64	220.70
UK	73.20	84.40	110.71	142.83	181.44	227.23	310.42

Table 9. Projection for Spending on Health Care in Constant Prices of 1995, Current Policy Scenario

(After) Economic Policy Committee (2001) and Economic Policy Committee (2003)

d. The Development of Future Public Expenditures on Education and on Unemployment Benefits

As a further age-related subject, the expenditure on education is considered here too. According to the UN World Population Prospect database, the projected number of young people, aged between 3 and 24 years, will decrease dramatically by 2050. Therefore, expenditures on education also are related to demographic development, and consequently, influence public spending. With the exception of Germany, whose expenditures on education will increase slightly, by 0.1 percent by 2050, even though the appropriate population cohort, aged between 3 and 24, will decrease by 11.7 percent, the other three countries will experience a decrease in education-related spending. So public spending on education, expressed as share of GDP, is projected to fall by 0.9 percent in France, whereas the one of Italy and Great Britain is expected to fall by 0.6 percent and 0.8 percent respectively.²³⁹

Although unemployment benefits are not an age-related subject, those expenditures, consume a high percentage of the produced GDP. On the other hand one can argue that, due to a decreasing workforce, those expenditures have to decrease too, as

²³⁹ Economic Policy Committee (EPC), *The impact of aging on public finances: overview of analysis carried out at EU level and proposals for a future work programme*, 2003: 29.

more unemployed people can be brought back to work. Relying on this assumption, the Economic Policy Committee expects for Germany a declining unemployment rate from 7.9 percent in 2000 to 5.6 percent in 2050. Consequently the share of GDP on unemployment spending will decrease from 1.1 percent in 2000 to 0.7 percent in 2050. Similar results are obtained for France and Italy. In contrast to those countries, however, British unemployment expenditures will slightly increase from 0.3 percent to 0.4 percent of GDP.²⁴⁰

e. The Overall Impact of Aging on Public Expenditures

In the previous section, the different age-related components of public spending were introduced and briefly discussed. In sum, the projection related to pension, health care, long-term care, education, and unemployment benefits amounts to a share of GDP between 18 percent and 30.2 percent. A complete overview for all four countries is provided in Table 10.

Public Spending [%]	2005	2010	2020	2030	2040	2050	Change [%]
FR	26.3	26.9	29.3	30.6	30.6	30.5	4.2
DE	23.7	23.4	24.9	28.4	29.9	30.3	6.6
IT	24.4	24.5	25.5	26.6	27.1	25.8	1.4
UK	17.5	17.3	17	18	17.3	18	0.5

Table 10. Projection of Public Spending on Pensions, Health, Long-Term Care, Education, and Unemployment Benefits as Share of GDP

(After) Economic Policy Committee (2003)

To complete this picture, debt liabilities should also be mentioned in this context. Although appropriate interest payments are not age-related, they will nevertheless have a high impact on the future financial situation. For example, the OECD specifies the net debt interest payments for 2005 at 2.5 percent of GDP for

²⁴⁰ Economic Policy Committee (EPC), The impact of aging on public finances: overview of analysis carried out at EU level and proposals for a future work programme, 2003: 33.

Germany, at 2.8 percent for France, at 4.7 percent and 1.5 percent respectively for Italy and Great Britain. Adding these liabilities to the social expenditures, public spending in 2005 for all these subjects together will lie in a bandwidth between 19 percent in the British case and approximately 29 percent for France and Italy. Germany will then have to spend 26.2 percent of its GDP.²⁴¹

However, converting the shares of total GDP into shares of general government total outlays, it becomes obvious that only the expenditures of the six subjects introduced so far already block between 42 percent and 60 percent of the present general governmental layout.²⁴²

To include the different interest payments, the individual average liabilities for France, Germany, Great Britain, and Italy are first calculated by means of an OECD data set reflecting the period between 2000 and 2006. These average values are then used to extrapolate into the future. This approach is chosen because, since 2000, the Italian payments have been relatively constant with a declining trend and, for the other three countries, the deviation from the long-term average is minimal. An extrapolation and illustration of this budgetary situation is now given in the figures below.

²⁴¹ OECD Economic Outlook 76 Database, updated 22 December 2004, http://www.oecd.org/document/61/0,2340,en_2649_201185_2483901_1_1_1_1,00.html (accessed 11. March 2005).

²⁴² Ibid.

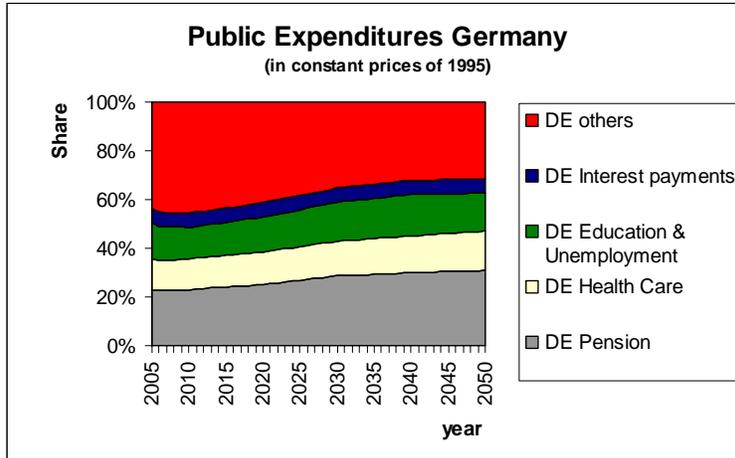


Figure 20. Projection of Public Expenditures for Germany

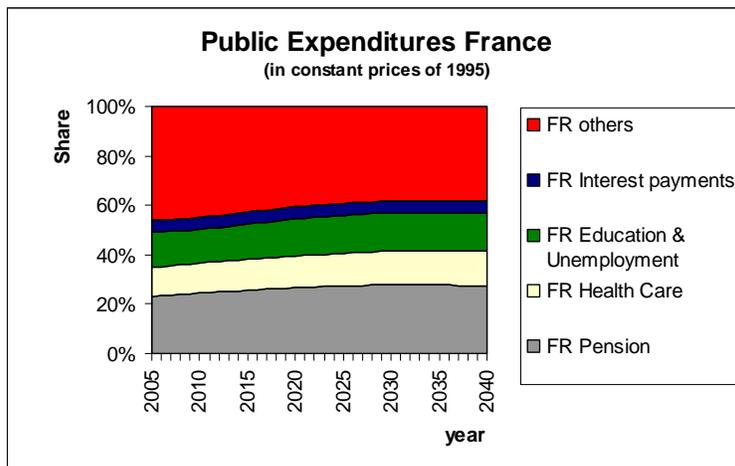


Figure 21. Projection of Public Expenditures for France

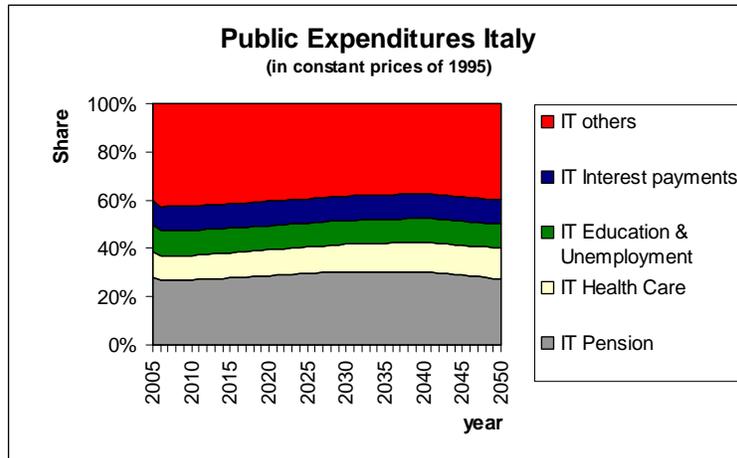


Figure 22. Projection of Public Expenditures for Italy

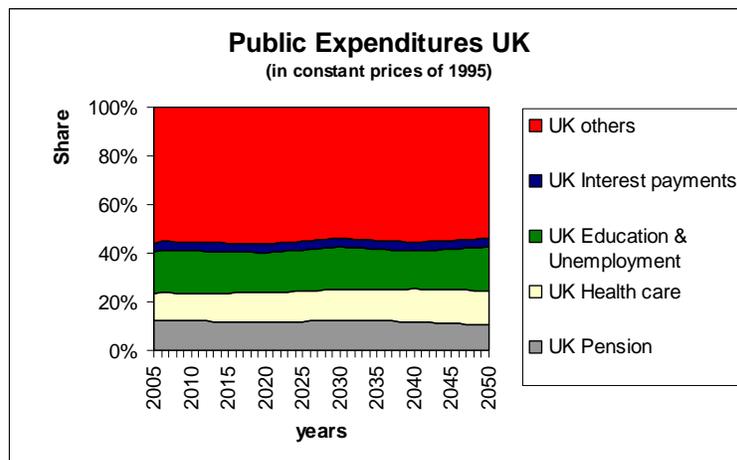


Figure 23. Projection of Public Expenditures for Great Britain

Comparing all of these graphs, the interesting point is that Italy, the country with the highest old-age dependency ratio in 2050 and the highest workforce shrinkage, will be better off in 2050 than Germany and France. In Italy, the financial situation will be worst between 2035 and 2040 and will recover by 2050. However, the total amount of the payments related to social expenditures, including debt payment amounts will still approximate 60 percent of the general governmental outlay. In sum, and with the consideration that public expenditures related to the above mentioned

subjects are already high in Italy, the fiscal situation will stay relatively stable and the impact of aging on the economy will be rather moderate.

The situation looks similar in Great Britain. Here, the impact of aging is almost unnoticeable. The public burden on social spending, including liabilities, stays constant on a level of approximately 45 percent.

In contrast to those two countries, the situation in Germany and France look different. Here the impact of aging is most dramatic. In France, the above listed expenditures will increase from 54 percent to 62 percent in the period between 2005 and 2040. In Germany, the social burden, including debt liabilities, will increase from 56 percent to 68 percent of the total general government outlay. Consequently, the increase of age-related necessities of 8 percent and 16 percent, respectively, will have to be saved in other areas. Taking into account the fact that, in the past, European countries were rather inclined to cut military expenditures in times of weak economies and tight budget situations, it is fair to argue in this context that an increase of military expenditures will be rather unlikely. On the contrary, it is more likely that the military budgets will have to contribute to future savings.

B. THE EUROPEAN DEFENSE EFFORTS UNDER FINANCIAL AND SOCIO-POLITICAL CONSTRAINTS

The previous section, emphasized the overall future financial situation of four selected European states. It showed that the scope of action for some expenditures, especially military budgets, will become tighter due to demographic developments. The situation is further displaced by the reluctance of European states to increase military spending, which makes it even more difficult for them to meet the requirements formulated in NATO's DCI and the European Union's Capability Action Plan. On the other hand, Europe must not only transform its armed forces to adapt to the new security environment, but also replace aging equipment.

Because France, Germany, Italy, and Great Britain are the biggest nations in Europe, with the highest military expenditures, I limit the following assessment largely to those countries. However, to some extent, I also consider U.S. expenditures, but only to

emphasize major differences. I also treat in more detail data pertaining to the total defense expenditures, defense expenditures as percent of GDP and per capita, and their distribution by different categories. This leads to a discussion, of the different possibilities that European countries have to ease the financial tensions and to improve their capabilities in the future.

1. Definitions

Military-related data are provided by many sources such as, among others, by NATO, the Stockholm International Peace Research Institute (SIPRI), the Center for Strategic and International Studies (CSIS), and the International Institute for Strategic Studies (IISS). In this assessment, I have drawn mainly on NATO and SIPRI. This is done because comparing sets of data taken from different sources may create obstacles. NATO, for example, raises its data by using standardized questionnaires, whereas other institutions' data represent a summary of different sources, including NATO. SIPRI points out that its data are "based on open sources only, including a SIPRI questionnaire."²⁴³ A similar statement is given by IISS, which claims, however, that its assessments are based on a variety of sources.²⁴⁴

Another major problem is the definition of *defense expressions*. NATO, for example, when compiling data from its questionnaire, about paramilitary troops, such as border police forces, includes in military budgets the French *gendarmerie* and the Italian *carabinieri*. In Germany, the border police are under the control of the Ministry of Interior, but according to NATO, that data also is added to the defense expenditures. Furthermore, in Germany, retirement pensions for military personnel are not an integral part of the defense expenditures. But again, according to NATO's data compilation, they also are shifted to the defense budget. The result is that defense expenditures listed by NATO may be higher than the official ones published by the pertinent government, as for example, in the case for Germany.

²⁴³ Stockholm International Peace Research Institute, "Databases," *SIPRI data on military expenditure*, http://www.sipri.org/contents/milap/milex/mex_database1.html, (accessed 07 February 2005).

²⁴⁴ International Institute for Strategic Studies, "The Military Balance 2004-2005," *Preface and Explanatory Notes*: 6, <http://www.iiss.org/conferencepage.php?confID=61>.

With respect to financial issues, we must pay attention to which GDP the data are applied to, the nominal or the real GDP. In the latter case, implications caused by inflation are excluded. For a clearer overall comparison, I express the defense expenditures in U.S. dollars. The most reliable data expresses expenditures in percent of GDP in constant prices and exchange rates related to a certain base year (e.g., 1995 or 2000). Otherwise, the data is distorted and may indicate increasing expenditures, whereas, in reality, the value is decreasing.

In the ensuing discussion, I apply the NATO approach as it provides the best comparability among countries.

2. The Development of European Defense Expenditures – A Case Study

Shortly after the Berlin Wall came down (1989-1990), NATO, and the European countries especially, started to reduce their defense expenditures and troop strengths. As compared to France, Great Britain, and Italy, Germany had to cope with the highest reduction of its defense budget because of costs of unification. Whereas Italy's expenditures started to increase slightly from 1995 on, and were higher in 2003 than in 1990, Germany reduced its expenditures by 32.4 percent over a period of 13 years, which is equivalent to an average cut of expenditures of 2.96 percent per annum. Although, the German minister of finance and minister of defense agreed to keep the military expenditure stable, the latter was cut by €0.5 billion in nominal terms for fiscal year 2005.

In contrast to Germany, France only reduced its defense expenditures by approximately 8 percent from 1990 to 1995 and has stabilized its spending since then. The situation in Great Britain is similar to that in France. Their budget was reduced by almost 25 percent over a period of six years, but British expenditures have been slightly increasing again since 2000.

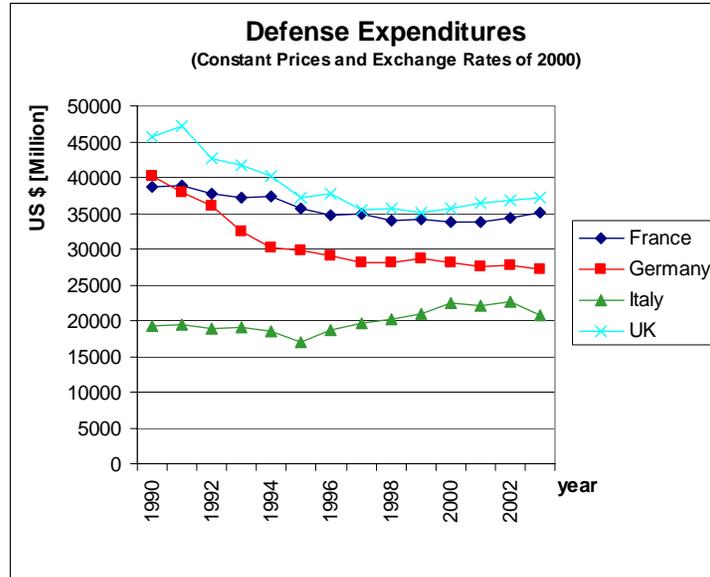


Figure 24. Defense Expenditures in Constant Prices and Exchange Rates of 2000

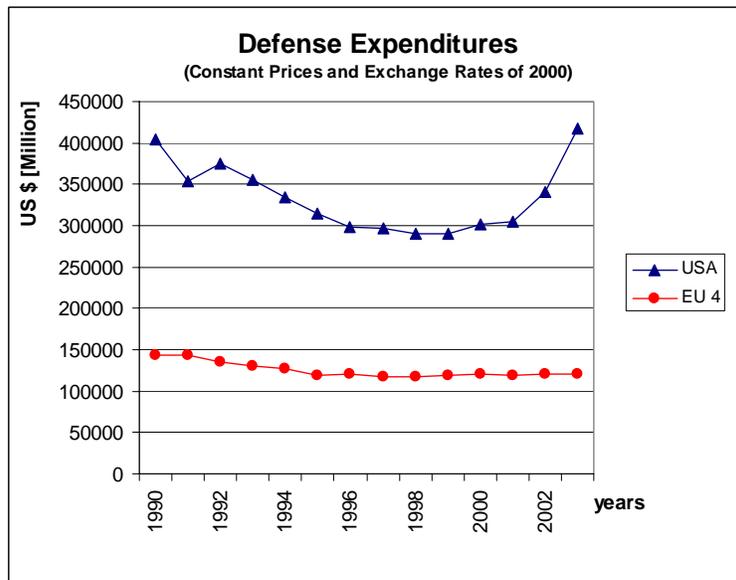


Figure 25. Defense Expenditure USA versus EU 4

This trend can probably be explained by the impact of the St. Mâlo Summit in 1998 and countries' resulting commitment to increase their defense efforts.

If we compare the development of European military budgets with that of the United States, it becomes obvious how big the difference in military spending between those two regions is.

Although the United States redeemed its “peace dividend” and cut its military budget by almost 25 percent between 1990 and 1996, followed by a slight increase until 2000, it is still 2.5 times higher than those of Germany, France, Italy, and Great Britain together. However, the impact of 9/11 is also clearly visible. Since 2002, the U.S. military expenditures are again increasing and are now on a higher level than in 1990, whereas European spending leveled out at about US \$120 billion.

The trend described in the preceding paragraphs continues taking into account the economic situation and the share of military expenditures with respect to GDP.

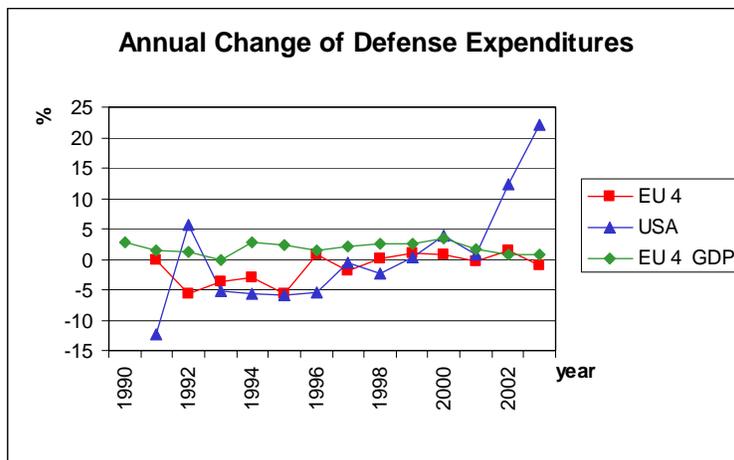


Figure 26. Annual Change of Defense Expenditures Based on Real Terms

Although the average annual real GDP growth in the 1990s balanced at approximately 2 percent after a sharp decline at the beginning of that decade, the annual rate of change of military expenditures equals to -5 percent from 1990 to 1995. From then on, the rate of change stabilized at approximately zero percent; that is, the defense budgets in real terms remained steady at their 1995 levels. In other words, whereas the economy was increasing annually by 2 percent in real terms during the 1990s, the level of

military budgets remained almost unchanged. Even more, its value and share of GDP decreased by at least the same amount as the economy grew. The appropriate changes in share of GDP are illustrated in Table 11.

Share of GDP	1990	2000	Change [%]
France	3.50	2.60	-25.7
Germany	2.80	1.50	-46.4
Italy	2.10	2.10	0.0
United Kingdom	4.10	2.60	-36.6

Table 11. Defense Expenditures as Share of GDP
(After) SIPRI

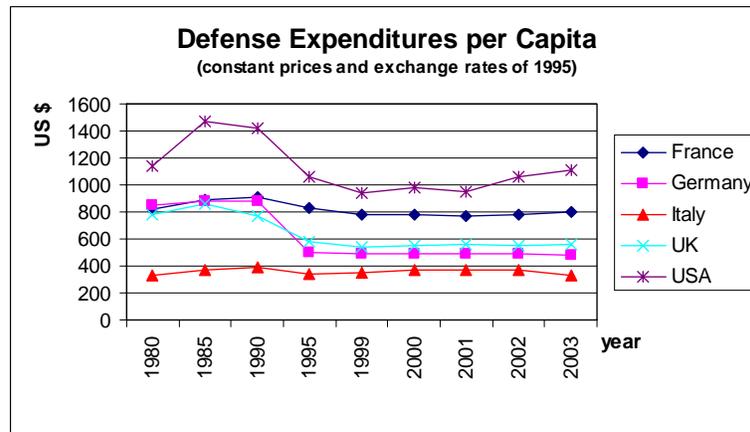


Figure 27. Defense Expenditures per Capita

Compared to U.S. spending, the ones of the EU 4 seem to be only a small contribution. Total expenditures of the selected European countries represent approximately only 40 percent of the U.S. spending. However, considering expenditures per capita changes this picture a little bit in favor of Europe. In total, U.S. spending per capita is still higher than that of the European countries, but the ratio changes: the defense expenditures per capita of France are still 80 percent compared to that of the United States; and even Great Britain's and Germany's spending per capita are, after all, 50 percent of that of the United States.

If all things remain equal, the situation may improve in the future in favor of these four European countries. The defense expenditures per capita will increase, as the populations start to decline in the next years (except for that of France), whereas the U.S. population is slowly growing. The index *defense expenditures per capita* is to some extent, however, just a cosmetic feature. Demographic effects can be considered and used to express the burden-sharing per capita. However, in reality, weapon systems and personnel have to be financed and paid in real terms, that is, in absolute money. A better ratio would be *defense expenditures per soldier/personnel* or even *research and development expenditures per soldier/personnel*. Whereas the former ratio represents a measure of the mechanization of the forces, the latter ratio may be more suitable to describe the state-of-the-art complexity and modernity of today's armed forces.

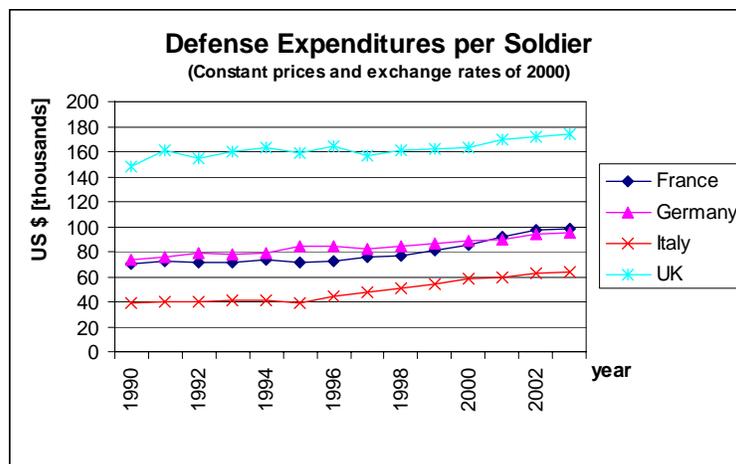


Figure 28. Defense Expenditures per Soldier

If we compare the ratio defense expenditure per soldier between the different countries, we realize that Great Britain again is in a class of its own. British spending per soldier is as much as the spending of Germany and France combined. However, one feature is common to all countries. In the first half of the transformation phase, defense expenditures were cut by the same rate as personnel. This means that no extra money

was available that could be shifted to investments. It was not until the mid-1990s that the situation slowly changed and the reductions of expenditures became less in comparison to that of personnel.

That situation is reflected also in expenditures related to research and development. Not only did the spending of France and Great Britain exceed those of Germany and Italy by more than 100 percent, there was also a clear increase in favor of research and development. Italy's expenditures on research and development, however, declined by approximately 50 percent from 1997 until 2001.

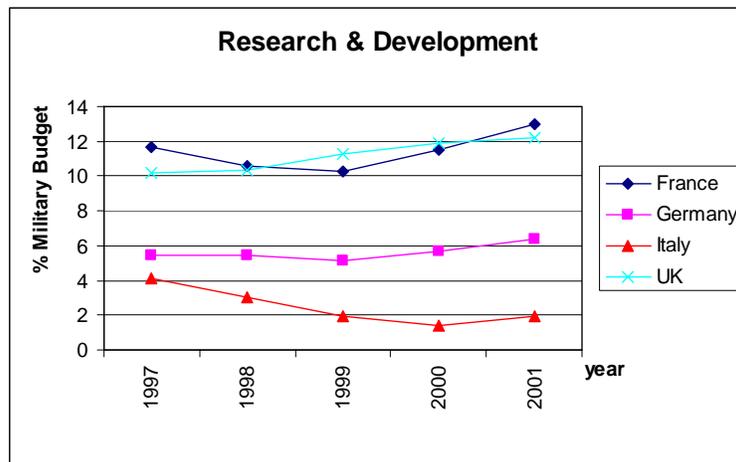


Figure 29. Research and Development Expenditures

This trend is also noticeable in the ratio of research and development per soldier.

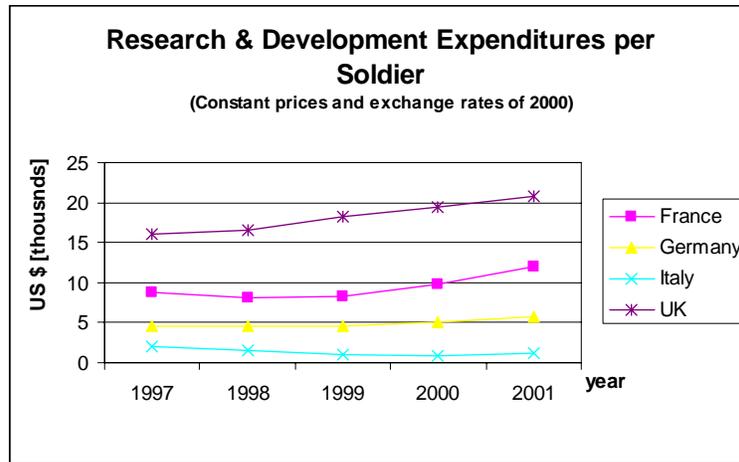


Figure 30. Research and Development Expenditures per Soldier

Taking into account other categories of military expenditures, one has to admit that Great Britain was best able to master the transformation process. In comparison to the other three countries Great Britain has the highest budget available, but the least personnel. Therefore, its personnel costs represent approximately only 40 percent of the total spending. In contrast to those figures, Germany's and France's personnel expenditures level at 60 percent on average, whereas Italy spends almost 75 percent for its personnel. Another interesting point is that Germany's expenditures for infrastructure decreased only slightly, even many units had been closed since 1990. Here the British forces have an advantage. Because they concentrated their remaining forces in fewer barracks, they have been able to cut spending for infrastructure since 1990 by approximately 4 percent. As the fraction of *others* increased, it can be assumed that the money saved is partly invested in *research and development*, as an increase of 2 percent can be noted there.

The same observations can be made regarding the category *equipment*. Germany has the third lowest budget of the four countries, but a force size as high as that of France (in 2003). In contrast, Great Britain's strength of armed forces is clearly the lowest of the

four, with the lowest personnel costs. So, in Great Britain's case, spending for equipment is still at a level of 23 percent of total expenditures, whereas Germany spends only 14 percent on equipment.

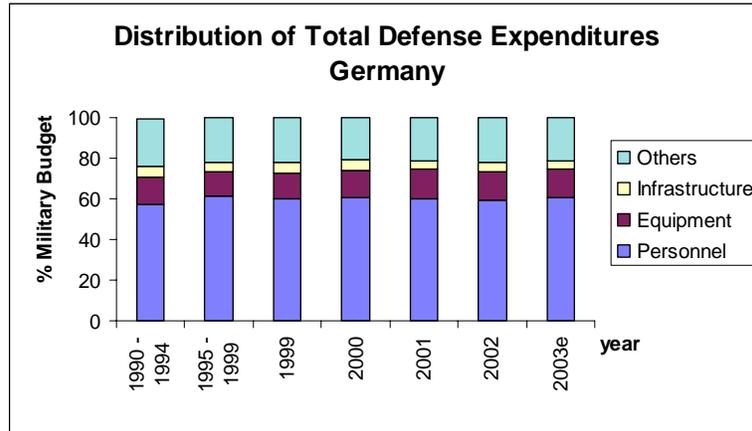


Figure 31. German Defense Expenditure - Distribution by Category

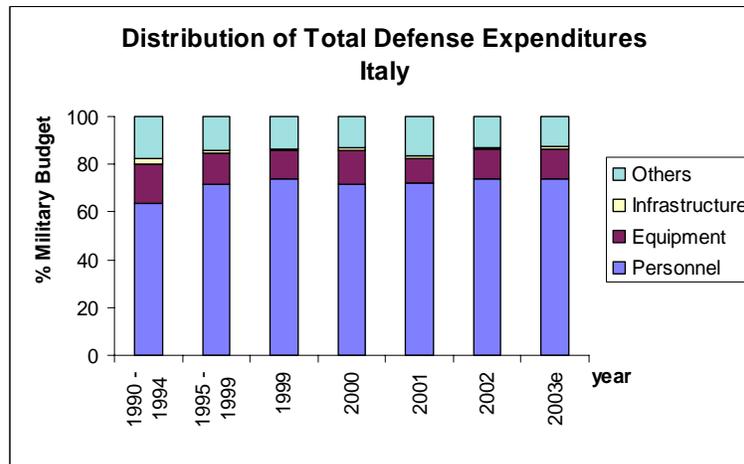


Figure 32. Italian Defense Expenditure - Distribution by Category

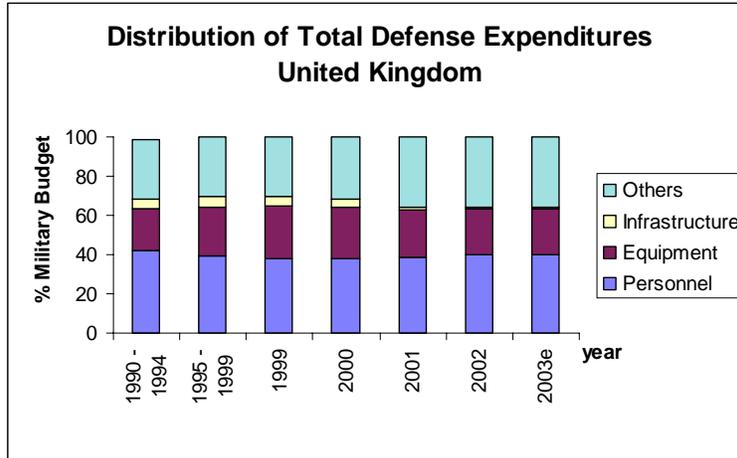


Figure 33. British Defense Expenditure - Distribution by Category

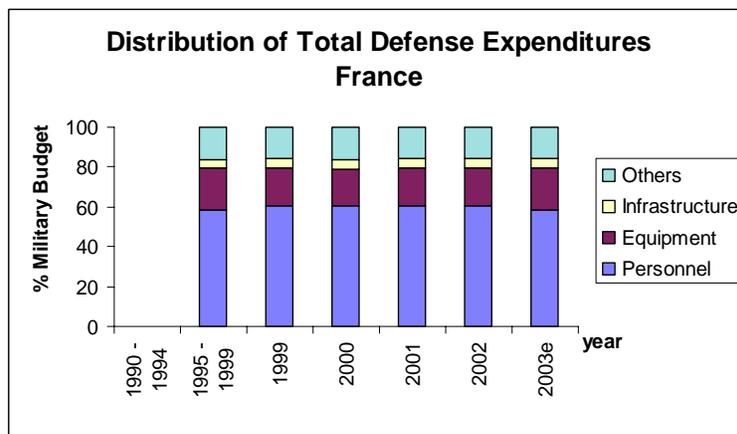


Figure 34. French Defense Expenditure - Distribution by Category

3. Assessments and Perceptions

Confronted with the situation described in the previous section, EU Secretary General Javier Solana admitted in an article he wrote in *Jane's Defense Weekly* in June 2000, that

too often the lack of progress has been the result, not of too much America, but of too little Europe. [...] The aim is to give the EU all instruments it needs, backing its diplomatic, economic and trade tools, if and when necessary, with the ability to use military assets. [...] We know we are short of strategic transport, intelligence and command-and-control assets. These can only be delivered by short- to medium-term increases in defense budgets and, in some cases, a significant re-orientation of our defense efforts.²⁴⁵

The former German Minister of Defense, Rudolf Scharping, argues the same way. With respect to an appropriate increase of the defense budget, Scharping emphasized,

if this does not happen the Bundeswehr will not fit into NATO's military framework and will be unable to fulfill the demands of European co-operation.²⁴⁶

But the main focus in Germany in 2000 was the reduction of the public debt. Thus no leeway for additional money to finance the DCI requirements was allowed. The German Undersecretary of State for the Ministry of Defense, Walter Kolbow, consequently pointed out at a conference "attended by industrial representatives" on May 4, 2000 that

the gaps in the capabilities of Germany's international obligations shall be closed while retaining compulsory service and within the framework of financial restrictions.²⁴⁷

This means nothing other than that the transformation process has not to take place with additional financial means, but by internal optimization. However, this position was criticized by the U.S. defense expert Daniel Gouré. His argument is that the "expense-dynamic for new weapons procurement in Germany are similar to those in the

²⁴⁵ Javier Solana, "Europe Must Build Its Military Muscle," *Jane's Defense Weekly* (14 June 2000), <http://jdw.janes.com/> (accessed 22 March 2005).

²⁴⁶ Ruediger Moniac, "Germany: DCI suffers lack of funding," *Jane's Defense Weekly* (14 June 2000), <http://jdw.janes.com/> (accessed 22 March 2005).

²⁴⁷ Ibid.

United States.”²⁴⁸ He continues by saying that therefore the procurement costs must be expected to rise on average by 5.1 percent per annum and that, consequently, the procurement budget has to double every 14 years “to provide for steady and continued modernization and replacement of the forces.” Daniel Gouré concludes that even an increase of the procurement budget by 0.1 percent of GDP would not be sufficient to meet these goals.²⁴⁹

The Italian Defense Minister Antonio Martino, supported the position of Daniel Gouré, also arguing in 2002, that Europe should aim at a convergence of its defense expenditures in terms of percent of GDP, without, however, violating the Maastricht criteria. Furthermore, he suggested that “Europe should allow 0.2-0.4 percent of the GDP to be devoted to long-term investment without being included in the total public spending.”²⁵⁰

Another argument often brought up in the context of military budgets is conscription. In order to professionalize its forces, France suspended conscription in June 2001 and then abolished it on 31 December 2002. However, looking at the development of the military budget, one discovers that, although since 2002 France has reduced the overall strength of personnel of its forces by ten thousand, its military budget increased by approximately US \$1.3 billion, measured in constant prices and exchange rates of 2000.

The Italian Defense Minister Antonio Martino takes a completely different position. In an interview with *Jane's Defense Weekly* in June 2002, he said that Italy's parliament had decided to suspend conscription in 2007. According to Martino, one of the major issues in this decision was the demographic development of the Italian population. He argues that, due to the stagnation of the “Italian birth rates over the past

²⁴⁸ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 24, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

²⁴⁹ *Ibid.*, 24-25.

²⁵⁰ Paolo Valpolini, “Interview with Antonio Martino, Italian Defense Minister,” *Jane's Defense Weekly* (June 05, 2002), <http://jdw.janes.com/> (accessed 22 March 2005).

15 years,” it was difficult to meet the required conscript level.²⁵¹ Hence, he continues,

my decision is based not only on ideology – I don’t believe in conscription – but also on pragmatism, and this makes me believe we must shift to a new model as soon as possible.²⁵²

Although in Germany also the number of young adults eligible for conscription will decrease due to the influence of demographic development in the future, its rationale is less about the financial aspect of conscription than about justice and conscription’s contribution to society. Considering conscription in the context of the demographic development in Germany, the former chief of staff, retired General Klaus Naumann, argued a position quite opposite to that of the Italian minister of defense. According to Klaus Naumann, the German armed forces are at risk because of Germany’s shrinking population.²⁵³ Furthermore he points out that

conscription is still necessary for Germany primarily due to the demographic development in the country. The number of young, fit, qualified people will continue to diminish over the years to come. Armed forces traditionally don’t get too much access to this group of people unless they pay a lot of money. As a drastic increase in the budget of defense is not very likely due to the need to reform domestically and socially I think we have to look for options of how to attract qualified young people and one of the proven instruments for recruitment is conscription.²⁵⁴

The conscription problems discussed above have also been addressed by the British Secretary of State for Defense, Geoff Hoon. For example, the 2001 British Defense Policy emphasizes that “a number of factors are likely to combine to maintain budgetary pressures.” They include the, “defense cost pressure” and “demographic trends in terms both of pressure on tax revenue and greater demands on health and social security spending.”²⁵⁵ Furthermore, Geoff Hoon pointed out that in the long run British

²⁵¹ Paolo Valpolini, “Interview with Antonio Martino, Italian Defense Minister,” *Jane’s Defense Weekly* (June 05, 2002), <http://jdw.janes.com/> (accessed 22 March 2005).

²⁵² Ibid.

²⁵³ Melanie Bright, “Germans debate future of conscription,” *Jane’s Defense Weekly* (August 18, 2004), <http://jdw.janes.com/> (accessed 22 March 2005).

²⁵⁴ Ibid.

²⁵⁵ British Ministry of Defence, *Defence Policy 2001*, Issue 39, 21 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

force recruitment will be challenged by future demographic developments and the need for highly qualified, motivated, and skilled personnel.²⁵⁶

In comparison to the other three European countries, the United Kingdom is best off in regard to its budget. But the interesting point is that Great Britain most clearly addresses its future demographic challenges and their implications for security, defense policy, and military budgets.

So, in sum, it can be argued that, between all major European countries, consensus exists to the effect that no leeway will exist for future increases of their military budgets, due to the financial problems caused the demographic development. But now the question is, what options are available to meet the transformation goals to which those governments committed themselves?

²⁵⁶ British Ministry of Defence, Defence Policy 2001, Issue 16-18, 21 November 2001, <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

THIS PAGE INTENTIONALLY LEFT BLANK

VIII. EUROPEAN POLITICAL - MILITARY POLICY OPTIONS

A. CURRENT REFORM AND TRANSFORMATION PROCESSES

The social-political constraints under which the European forces presently have, and will have, to operate were outlined in the previous chapter. As I showed there, the chance for increasing future defense budgets is rather small. Similar to Germany, France broke the Stability and Growth Pact in 2004 for the third time in a row. Consequently, Prime Minister Jean-Pierre Raffarin ordered all ministries to freeze or reduce spending.²⁵⁷ It is expected, therefore, that the French will cut defense expenditures as share of GDP from a level of 2.04 percent in 2004 to 1.99 percent in 2005. This trend will continue until 2008, with an estimated share of 1.87 percent of the GDP.

But this does not mean that the reform process in Europe has come to a halt. On the contrary, Europe has been politically and militarily very successful in continuing its reform and transformation process in order to adapt its forces to the new threat environment. For example, the French government set up a challenging six-year plan which includes for 2005 the procurement, among others, of ten Rafale multi-role fighter aircraft, eight HAP Tiger helicopters, one NH multi-role medium helicopter, 330 VAB, and 66 VBL armored personnel carriers.²⁵⁸

Not only France, but also Germany, forwarded the transformation process of the Bundeswehr, too. So, although Germany is working on all areas identified by NATO's Defense Capability Initiative, German priorities are strategic deployability, global intelligence, and C3 capabilities. Within those main areas, the German government contracted, between 1998 and 2001, approximately 12 billion Euros, part of which was used for projects like MIDS (multifunctional information distribution system); SAR LUPE, an all-weather radar satellite system for strategic reconnaissance; UH-TIGER helicopters; and the conversion of four A-310 Airbus to multi-role transport tanker aircrafts. In addition to those investments, the Bundestag backed the procurement of 73

²⁵⁷ Jane's, "Defense Spending France, Jane's Sentinel Security Assessment – Western Europe" (March 18, 2005), <http://jdw.janes.com/> (accessed 22 March 2005).

²⁵⁸ Ibid.

A-400M transport aircrafts in 2002 to replace the aging C-160 Transall fleet.²⁵⁹ Since 2000 further efficiency improvements have been achieved in German forces by introducing the Development, Procurement, and Management Group (GEBB). The GEBB is organized as a private company and “has a central role to play in the coordination and co-operation with industry and trade and the creation of additional leeway for investments.”²⁶⁰

Its main management systems are the Fleet Management System, responsible for the provision and optimization of the transport services; the Clothing Management System, responsible for the “reduction of stocks and storage capacities” and the economical provision of personal equipment; and finally the Real Property Management System, which is, among others, responsible for the management and marketing of no longer needed infrastructure.²⁶¹

Another company founded in 2002 was the Information Technology Company. Its task is to provide information technology, ranging from “standard office equipment and large-scale databases used for steering the flow of material and the IT elements of weapon systems to the command, control and information systems used by the different services.”²⁶²

In addition to these measures, Germany could effect further improvement in budgetary control by introducing new controlling means, like a cost and performance responsibility program and a continuous improvement program. The former program should encourage personnel to “embody economic efficiency as a principle criterion governing the way they think and act.”²⁶³ The latter program should encourage personnel to develop creativity and propose areas and ways to save money.

²⁵⁹ Bundesministerium der Verteidigung, “The Bundeswehr in 2002: The Current Situation and Perspectives,” (April 8, 2002): 36-38.

²⁶⁰ Ibid., 40.

²⁶¹ Ibid., 41.

²⁶² Ibid., 42.

²⁶³ Ibid., 45.

Beside these aspects, the German Armed Forces has continued with its internal reform process by optimizing and combining common tasks, command support, intelligence support, and general training assets. The aim was to reduce the burden on the Army, Air Force, and Navy so that they would be more capable of concentrating on their core operational tasks. With respect to operation planning and conducting, the Bundeswehr Operations Command (BwOPSCOM) was introduced; it serves at the same time as national element and infrastructure “for an EU Operations Headquarters under German command.”²⁶⁴

The next decisive step within the transformation of the German Armed Forces is the adaptation to a new operational spectrum. From 2004 to 2010, the forces will be restructured in three new force categories – response forces, stabilization forces, and support forces – and will consist in total of a strength of 152,500 military personnel.²⁶⁵ The overall capability of these force categories will be fully drawn from the “joint action of the Army, Air Force, Navy, Joint Support Service and Central Medical Service.”²⁶⁶

But in an international context, these resources will not only contribute to NATO but also to the European “Battle Groups” that were agreed upon by the European ministers of defense in November 2004. So Germany will contribute in total to four battle groups, each of which has a strength of 1,500 soldiers.²⁶⁷

²⁶⁴ Bundesministerium der Verteidigung, “The Bundeswehr in 2002: The Current Situation and Perspectives,” (April 8, 2002): 46-47.

²⁶⁵ Bundesministerium der Verteidigung, “New Force Categories,” <http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/W268ZEF5630INFOEN> (accessed 2 April 2005).

²⁶⁶ Bundesministerium der Verteidigung, “The Bundeswehr on a new Course,” <http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/W268ZEG2160INFOEN> (accessed 2 April 2005).

²⁶⁷ Bundesministerium der Verteidigung, “Verteidigungsminister der Europäischen Union beschließen Battle Groups,” <http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/N268RHQY315MMISDE> (accessed 2 April 2005).

The broadening of the task spectrum in the German armed forces, however, consequently led to a demand for “highly qualified, flexible and motivated personnel.”²⁶⁸ In response to that demand, the Bundeswehr introduced a new personnel structure and an attractiveness program.

Similar to Germany, the “Policy for People” is clearly expressed in the British Defense Policy of 2001. However, in the British paper this problem is discussed not only from the military point of view, but also in demographic terms too. Aware of the predicted future demographic development in Great Britain, the ministry of defense sees itself in competition with industry to get the “best and brightest” and to recruit enough young people to fill available posts.

The above outlined reform and transformation process of the British, French, and German military points out that, while no extra money is presently available for the task, European military forces were able, by internal optimization, to begin the adaptation to the new mission spectrum. However, this process takes a very long time, and in the German case, its completion is projected for 2010. The process of internal optimization will come to an end sooner or later, but the budgetary constraints caused by the demographic developments will further increase. So to catch up and close the capabilities gap, with respect to the new mission scenarios according to the ESDP, the European nations have to think about how to get the most “bang for the buck.”

Europe’s policy of economics is oriented toward fulfilling the most important criteria of the stability and growth pact: low inflation rates and low new borrowing per annum. An increase in military expenditures financed by an increase of deficits is neither reasonable nor popular and, consequently, cannot be pushed through politically. Hence, this leads to the question, what possible future policy options may be available to strengthen capabilities to react to the new threat scenarios and to proceed with military transformation under the circumstances of tight budgets?

²⁶⁸ Bundesministerium der Verteidigung, “The Bundeswehr in 2002: The Current Situation and Perspectives,” (April 8, 2002): 28.

B. POSSIBLE FUTURE POLICY OPTIONS

As outlined in the previous section the presently ongoing reform and transformation process is mainly driven by internal optimization with the goal to streamline processes and to reduce redundancies and slack, in order to free money that can then be invested in modernization. The U.S. defense expert Daniel Gouré compares this situation to the funding of military forces with an “insurance that may never be used.” Therefore, military spending is a “tradeoff between costs and risks.”²⁶⁹ The question is, what policy options are available?

With respect to Daniel Gouré’s assessment, the policy option, hoping for the best, is perhaps the “most likely scenario” as long as the threats and conflicts “remain remote and small” and as long as the threat scenarios do not “threaten the allies’ economic and security interests.”²⁷⁰ He argues, on the one hand, that the threats due to “regional instability” and the “economic order” are recognized, but that, on the other hand, the unwillingness to increase military expenditures in order to be able to meet those threats, if forced to, is still high.²⁷¹ However, a counterargument to Daniel Gouré’s is that, at least in the European case, it is not a question of willingness in the first place, but a question of historical experience and budgetary constraints. Furthermore, the European countries, as shown by the example of France, Germany, Great Britain, and Italy, are already working hard to meet their commitments regarding NATO’s DCI and the ESDI. Closely related to this option and the argument of “unwillingness” is the option of increased defense spending. Aware of the “domestic pressure for making further cuts in defense budget,” Rudolf Scharping, former German minister of defense, installed a commission in March 1999, led by the former German president, Richard Weizsäcker, to examine ways to reform the Bundeswehr. Although one solution was to cut the number of personnel, the Weizsäcker report also mentioned that

the change [...] cannot be made without fiscal expenditures and above this: You have to spend to save. This is not only true of the socially

²⁶⁹ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 40, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

²⁷⁰ *Ibid.*, 40-41.

²⁷¹ *Ibid.*, 40.

acceptable reduction in personnel and measures designed to increase the attractiveness of service in the Bundeswehr and so to help it recruit the people it needs [...] In addition, funds will be needed to bring equipment and material up to modern standards and to keep them there. The investment share must be raised permanently.²⁷²

However, as shown in this thesis, Germany and other European countries are maintaining an extensive social security net that, despite reforms, will come more and more under pressure as the demographic trend of aging proceeds. Consequently, money will have to be shifted to social issues to secure this net, with the result that less money will be left for remaining public spending, including defense. Thus, the option of increased defense spending is a non-option, considering the present economic situation and the impact of demographic developments on the future budgetary situation.

A further policy option may be the seeking of new alliances. The U.S. Commission on National Security/21st Century already suggested, before the events of 9/11, that the importance of “traditional formal alliances will increasingly be replaced by coalitions of the willing.”²⁷³ Furthermore, Daniel Gouré argues that military capabilities are likely to erode in the future, considering the financial constraints. Consequently, this may further undermine traditional alliances. In addition, he continues, the U.S. government may come under “strong pressure domestically to reduce or even abandon alliance relationships with nations unwilling to shoulder a sufficient degree of the military and financial burden of such relationships.”²⁷⁴

This argument, although not clearly expressed, is meant for Europe. However, seeking new alliances is no solution for Europe. In the European Security Strategy (ESS), published in December 2003, the European heads of state clearly emphasize the role of formal alliances, and the United Nations Charter is acknowledged as the “fundamental framework for international relations.”²⁷⁵ The ESS further states that the

²⁷² Clause 12 under the “Requirements” section of the Weizsäcker report in Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 23, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).²³

²⁷³ Daniel Gouré, “International Security and the Aging Crisis,” *CSIS International Security Program* (December 2000): 42, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

²⁷⁴ *Ibid.*, 42.

²⁷⁵ Council of the European Union, *European Security Strategy*, Brussels, 8 December 2003: 11.

“United Nations Security Council has the primary responsibility for the maintenance of international peace and security.”²⁷⁶ Therefore, one of Europe’s priorities is to strengthen the UN and equip it so that it is able to act effectively.²⁷⁷ The strategy emphasizes very clearly that one of the “core elements of the international system is the transatlantic relationship” and that “NATO is an important expression of this relationship,” which is consequently irreplaceable.²⁷⁸ Furthermore, the document expresses the inclusion of regional organizations in the framework of international relations and underlines their necessity and contribution to a more secure world. Thus the European Union is interested in strengthening organizations like OSCE or ASEAN, MERCOSUR, and the African Union.²⁷⁹ Last but not least, additional evidence, that the policy option of seeking new alliances is a non-option for the European security idea, is the following declaration of intent:

International cooperation is a necessity. We need to pursue our objectives both through multilateral cooperation in international organizations and through partnerships with other key actors or regions. [...] Acting together, the European Union and the United States can be a formidable force for good in the world. [...] Our aim should be an effective and balanced partnership with the USA. This is an additional reason for the EU to build up further its capabilities and increase its coherence.²⁸⁰

So, in sum, it can be argued that non of the above policy options fulfills the criteria for achieving better adapted and more effective forces and force structures. This leaves to a policy option that Daniel Gouré summarizes by the term *collectivized defense*. Although Europe has already chosen this way of defense, it can be argued that this process has to be further intensified. One example of collective defense among European countries is the introduction of common weapon systems. Common battle groups and multinational brigades also contribute to the rationalization efforts. And necessity “to combine efforts, to make better use of current capabilities and to enhance efficiency” was achieved by the establishment in 2002 of the European Airlift Coordination Cell (EACC),

²⁷⁶ Council of the European Union, *European Security Strategy*, Brussels, 8 December 2003: 11.

²⁷⁷ *Ibid.*, 11.

²⁷⁸ *Ibid.*, 11.

²⁷⁹ *Ibid.*, 11.

²⁸⁰ *Ibid.*, 15.

which can be traced back to an initiative of the former German minister of defense, Rudolf Scharping.²⁸¹ Other tools that contribute to these goals are the establishment of European procurement agencies like OCCAR and the new European Defense Agency (EDA). By continuing to enhance these efforts, redundancies among the different European forces can be reduced and parallel developments can be avoided, leading to an optimized procurement of weapon systems. Another step in the European development process is the division of labor among different nations, in other words, the specialization on special types of missions.²⁸² This means, however, that the same nation would always be involved in conflicts in which those capabilities would be required.

In the light of Europe's demographic developments, its immediate geographic proximity to regions of crises and its present and future financial situation, it can be argued that from the policy options of hoping for the best, increased defense spending, new allies, and collective defense, only the latter policy option has a chance to be realized. Europe is already on its way, but the process has to be intensified to avoid getting stuck in the demographic trap. Furthermore, it has to be intensified to optimize the military budgets and to increase the efficiency and effectiveness of European forces.

²⁸¹ Speech by the state secretary for defence, Mr. H. Van Hoof, February 28, 2002, Eindhoven Air Base, http://www.mindef.nl/nieuws/toespraken/280202_toespraak.html (accessed 16 April 2005).

²⁸² Daniel Gouré, "International Security and the Aging Crisis," *CSIS International Security Program* (December 2000): 41, <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

IX. CONCLUSION

In the 19th and the early 20th centuries national power and security were closely linked to demographics. In other words, the more people a state had, the more power was associated with such population. However, with the ongoing transition process of societies in industrialized countries, this relationship began to change. The population in these countries started to shrink as birth rates began to fall. This process was and is still overlapped by increasing life expectancy and, consequently, low mortality rates. Although these developments are globally prognosticated by the United Nations, the process of aging does not occur in all societies at the same time, but as a rule of thumb one can predict that, in less-developed countries, the people are younger on average. Hence, the demographic development

creates new challenges to the international community and to the traditional structure of power. More population in most of situations means more threats and more conflicts, and must imply more demographic politics.²⁸³

This demography, is exactly the situation European countries have to cope with. European societies are already aging and shrinking a trend that will cause further problems. For example, the dependency ratio will increase dramatically in the future. Whereas in France and Great Britain 2.6 workers have to support one pensioner in 2005, only 1.4 workers will be available in 2050. This situation is worse in Germany and Italy, where 2.2 workers support one pensioner in 2005, but in 2050 this will be done by only 1.3 German workers and 1.0 Italian worker. In regard to this situation and its future implication, Günther Nolting, spokesman for defense issues of the FDP Fraction in the German parliament, points out that:

The demographic development is one of the basic factors, which influences the financing of the total governmental budget. Changes of the age structure, high unemployment rates, a bad economic situation and the emigration of qualified human capital are responsible for a massive reduction of tax revenues. This fiscal factor leads to difficulties in distributing tax income. Even the defense budget is effected. [...] In the

²⁸³ João Vieira Borges, "Demographics and Strategy," *International Studies Association*, <http://www.isanet.org/archive/borges.html> (accessed 6 November 2004).

case, that these fiscal restrictions will continue the already insufficient budgetary situation, the discrepancy between wishes and realization will further increase.²⁸⁴

Comparing now the European situation with that of its neighboring countries in North Africa and the Middle East, the problems induced by demography are totally different. Whereas the European population is already shrinking, the societies of those countries are still growing. This growth, however, is counteracted by a slow growing or stagnating economy, resulting in a living standard that does not keep pace with the population's growth rate.²⁸⁵ This leads to a different set of problems and burdens than Europe's for the political leaders in this region. Because of losing their livelihood and diminishing resources in rural areas, people tend to move to urban centers or abroad, hoping for a better economic future. Overcrowding, slum building, socio-economic stress, pollution and urban development are some of the resulting consequences. This picture is even worse, if we take into account countries' ethnic composition and cultural differences.²⁸⁶ This set of problems, if combined with weak governments may initiate domestic riots and violence that may spread to neighboring countries and may lead to interstate wars. Due to this scenario, the international community is under increasing pressure for peace support, humanitarian assistance and disaster relief operations.²⁸⁷ In sum, considering the emergence of this new security environment, it becomes apparent that "demographics, as political and strategic instrument, will tend to be more prominent in the future, in which the "Demographic Clash" between the North, Rich and Old, and the South, Poor and Young, will be bigger than never in History."²⁸⁸

²⁸⁴ Günther Nolting, spokesman for defense issues of the FDP Fraction in the German parliament, answer to a request by the author.

²⁸⁵ John J. Hamre, "The Geopolitical Implications of Global Ageing in the Industrialized Countries," *Remarks by John J. Hamre President and CEO Center for Strategic and International Studies at a conference on The Economic and Budgetary Impacts of Global Ageing* 4 March 2003 Brussels – Belgium: 3, <http://www.csis.org/gai/brussels/hamre.pdf> (accessed 6 November 2004).

²⁸⁶ Michael C. Desch, "Why MOUT Now?" in *Soldiers in Cities: Military Operations on Urban Terrain*, ed. Michael C. Desch, (Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001): 5, <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).

²⁸⁷ British Ministry of Defence, *Defence Policy 2001*, 12 November 2001.

²⁸⁸ João Vieira Borges, "Demographics and Strategy," *International Studies Association*, <http://www.isanet.org/archive/borges.html> (accessed 6 November 2004).

Giving those predictions of future developments, we see that not only the sources of conflict and also the sources of national power will change. Thus the way future conflicts are waged will likely also be different. Because of the current demographic trend of urbanization, military operations on urban terrain may be much more likely in the future than they were in the past. Furthermore, belligerents then will try to nullify the technological advantage of international forces by using new strategic means such as guerilla warfare, terrorism, cyber attacks, ethnic diasporas, and the scarcity of renewable resources.

In January 2000, the Deputy Director of International Security Studies, CSIS, Daniel Gouré, commented on this threat perception, and the need to adapt forces to meet the new security requirements was, by quoting former U.S. Secretary James Schlesinger:

We do not wish in the West to fight as others would. We do not see warfare or the management of security issues as one of placing young men and women, poorly armed and poorly trained, directly in the line of fire. In fact, the kinds of militaries that are required by our military leadership, by our political leadership, and by our peoples, are high-tech, highly trained, able to preserve life to the extent possible as well as inflict damage. That costs money. There is no way to have a first-class defense in the US and the Western countries on a second or third class budget. It is simply impossible.²⁸⁹

These requirements cited by James Schlesinger are hard to fulfill. The problem for European countries is that the financial situation is already under heavy pressure due to increasing age-related expenditures for pensions or health care. Already today in France, Germany, Great Britain, and Italy, the share of health care, pensions, education, unemployment, and debt reliabilities of the total public expenditures lies between 42 percent and 60 percent. And this situation, except for Great Britain, will become even worse in the future.²⁹⁰ Consequently, increases in defense expenditures, although necessary and desirable, are not likely to be achieved in the present and future budgetary

²⁸⁹ Daniel Gouré., "A Dual Aging Crisis: The Implications of an Aging Military Infrastructure," *CSIS Policy Summit on Global Aging*, <http://www.csis.org/gai/Graying/speeches/goure.html> (accessed 6 November 2004).

²⁹⁰ OECD Economic Outlook 76 Database, updated 22 December 2004, http://www.oecd.org/document/61/0,2340,en_2649_201185_2483901_1_1_1_1,00.html (accessed 11. March 2005).

situation. Thus, other ways have to be found to meet the reform and transformation requirements.

During the first internal reform of European forces, steps were taken to reduce redundancies and foster optimization. The next step is to tailor forces to appropriate future missions. However, due to the socio-economic constraints, combined with the resulting budgetary burdens, it will become difficult for European nations to maintain their own extensive force package.

Therefore, the final conclusion is that European integration has to be further fostered and deepened. Europe has to enhance its efforts to integrate and transform national into European armed forces in order to get the most effective armed forces under the given budgetary constraints.

APPENDIX

Europe	
France	FR
Germany	DE
Italy	IT
Spain	ES
Turkey	TR
United Kingdom	UK
North Africa	
Algeria	DZ
Egypt	EG
Libyan Arab Jamahiriya	LY
Mauritania	MR
Morocco	MA
Tunisia	TN
Western Sahara	EH
Africa	
Eritrea	ER
Mali	ML
Senegal	SN
Somalia	SO
Sudan	SD
Middle East	
Iran (Islamic Republic of)	IR
Iraq	IQ
Jordan (Hashemite Kingdom of)	JO
Lebanon	LB
Palestine	PS
Syria Arabic Republic	SY
Central Asia	
Afghanistan	AF

Table 12. Abbreviations of the Countries Mentioned in this Thesis.

THIS PAGE INTENTIONALLY LEFT BLANK

BIBLIOGRAPHY

- Béchat, Jean-Paul and Felix G. Rohatyn. "The Future of the Transatlantic Defense Community." Final Report of the CSIS Commission on Transatlantic Security and Industrial Cooperation in the Twenty-first Century. *The CSIS Press* (January 2003).
- Birg, Herwig. "Demographic Aging and Population Decline in 21st Century Germany - Consequences for the Systems of Social Insurance." *Expert Group Meeting on Policy Responses to Population Aging and Population Decline, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York, 16-18 October 2000.*
- Birg, Herwig. „Auswirkungen und Kosten der Zuwanderung nach Deutschland: Gutachten im Auftrag des Bayerischen Staatsministeriums des Innern.“ *Institut fuer Bevoelkerungsforschung und Sozialpolitik der Universitaet Bielefeld*, (December 2001).
- Börsch-Supan, Axel and Joachim K. Winter. "Population Aging, Savings Behavior and Capital Markets." *National Bureau of Economic Research* (December 2001), <http://www.nber.org/papers/w8561> (accessed 6 November 2004).
- Börsch-Supan, Axel. "Global Aging Issues, Answers, More Questions." *Mannheim Research Institute for the Economics of Aging (MEA), University of Mannheim, Germany* (July 2004), http://www.mea.uni-mannheim.de/mea_neu/pages/files/nopage_pubs/li2ingsuenc0skcz_dp55.pdf (accessed 6 November 2004).
- Borges, João Vieira. "Demographics and Strategy." *International Studies Association*. <http://www.isanet.org/archive/borges.html> (accessed 6 November 2004).
- Bright, Melanie. "Germans debate future of conscription." *Jane's Defense Weekly* (August 18, 2004). <http://jdw.janes.com/> (accessed 22 March 2005).
- British Ministry of Defence. *Defence Policy 2001*. 21 November 2001 <http://www.mod.uk/issues/policy2001/context.htm> (accessed 22 November 2004).

British Ministry of Defence. *Strategic Defense Review, White Paper*. Presented to Parliament by the Secretary of State for Defence by Command of Her Majesty. July 1998. <http://www.mod.uk/issues/sdr/index.htm> (accessed 25 February 2005).

Bühler Christoph. "Die Französische Revolution."
<http://www.zum.de/Faecher/G/BW/neuzeit/frzrev/fr2.htm> (accessed 31 December 2004).

Bundesministerium der Verteidigung. *Defence Policy Guidelines for the area of responsibility of the Federal Minister of Defence*, May 2003.
http://www.bmvg.de/misc/pdf/sicherheit/030521_VPR-english.pdf (accessed 24 September 2004).

Bundesministerium der Verteidigung. "The Bundeswehr in 2002: The Current Situation and Perspectives." (April 8, 2002).

Bundesministerium der Verteidigung. "New Force Categories."
<http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/W268ZEF5630INF OEN> (accessed 02 April 2005).

Bundesministerium der Verteidigung. "The Bundeswehr on a new Course."
<http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/W268ZEG2160INF OEN> (accessed 02 April 2005).

Bundesministerium der Verteidigung. "Verteidigungsminister der Europäischen Union beschließen Battle Groups."
<http://www.bmvg.de/C1256F1200608B1B/CurrentBaseLink/N268RHQY315MM ISDE> (accessed 02 April 2005).

Bundesministerium der Verteidigung. "The Bundeswehr in 2002: The Current Situation and Perspectives." (April 8, 2002).

Central Intelligence Agency (CIA), *Long-Term Global Demographic Trends: Reshaping the Geopolitical Landscape*. Eldis Gateway to Development Information (July 2001). <http://www.eldis.org/static/DOC9390.htm> (accessed 6 November 2004).

- Cincotta, Richard P., Robert Engelman, and Daniele Anastasion. *The Security Demographic: Population and Civil Conflict after the Cold War*. Washington D.C.: Population Action International, 2003.
- Collin, Linda. *Britons: Forging the Nation 1707-1837*. New Haven: Yale University Press, 1992.
- Council of the European Union. *European Security Strategy*. Brussels, 8 December 2003.
- CSIS Commission on Global Aging. *Global Aging: The Challenge of the New Millennium*. 10 December 1999. <http://www.csis.org/gai/GlobalAging.pdf> (accessed 6 November 2004).
- Desch, Michael C. "Why MOUT Now?" in *Soldiers in Cities: Military Operations on Urban Terrain*, edited by Michael C. Desch. Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001. <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).
- Deutscher Bundestag. Schlussbericht der Enquête-Kommission. "Demographischer Wandel – Herausforderungen unserer älter werdenden Gesellschaft an den Einzelnen und die Politik." 14. Wahlperiode, Bundesdrucksache 14/8800, 28 March 2002.
- Duffield, John S. *Power Rules: The Evolution of NATO's Conventional Force Posture*. (Stanford, CA: Stanford University Press, 1995).
- Economic Policy Committee (EPC). *The impact of aging on public finances: overview of analysis carried out at EU level and proposals for a future work programme*, Brussels, 22 October 2003.
- Economic Policy Committee (EPC). *Budgetary challenges posed by aging populations: the impact on public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances*, Brussels, 24 October 2001.

Embassy of France in the U.S., "Capabilities of the French Forces," *French Defense Overview*, <http://www.info-france-usa.org/intheus/defense/defense.asp>.
Encyclopedia Britannica online, <http://www.britannica.com> (accessed 09 February 2005).

Ethelston, Sally. "Water and Women: The Middle East in Demographic Transition," *Middle East Report*, No. 213, *Millennial Middle East: Changing Orders, Shifting Borders* (Winter 1999): 8-12+44.

European Union. *Presidency Report on the European Security and Defense Policy*. 13 December 2000. http://ue.eu.int/ueDocs/cms_Data/docs/pressdata/en/misc/14056-r3.en0.html (accessed 25 February 2005).

European Union. *Presidency Conclusions*. European Council, Cologne 3 - 4 June 1999.

European Union. *Declaration of the European Council on strengthening the common European policy on security and defence*. Press Release: Brussels (03-06-1999) - Nr. 122/99. http://www.basicint.org/europe/ESDP/0699-PR_EUdefpol.htm (accessed 27 February 2005).

European Union. *Treaty of Amsterdam, Article J.7-2*. http://europa.eu.int/eur-lex/en/search/treaties_other.html (accessed 10 January 2005).

European Union. *Treaty of Maastricht, Article J.4*. http://www.uni-mannheim.de/edz/doku/vertrag/engl/m_engl.html (accessed 10 January 2005).

GCIR, <http://www.gcir.org> (accessed 14 January 2005).

Gouré, Daniel. "A Dual Aging Crisis: The Implications of an Aging Military Infrastructure." *CSIS Policy Summit on Global Aging*. <http://www.csis.org/gai/Graying/speeches/goure.html> (accessed 6 November 2004).

Gouré, Daniel. "International Security and the Aging Crisis." *CSIS International Security Program* (December 2000). <http://www.csis.org/gai/intlsecaging.pdf> (accessed 6 November 2004).

- Hamre, John. "The Geopolitical Implications of Global Ageing in the Industrialized Countries." *Remarks by John J. Hamre President and CEO Center for Strategic and International Studies at a conference on The Economic and Budgetary Impacts of Global Ageing* 4 March 2003 Brussels – Belgium. <http://www.csis.org/gai/brussels/hamre.pdf> (accessed 6 November 2004).
- Helgerson, John, L. "The National Security Implications of Global Demographic Change," speech at the Denver World Affairs Council and the Better World Campaign in Denver, CO on April 30, 2002, http://www.cia.gov/nic/speeches_demochange.html.
- International Institute for Strategic Studies. "The Military Balance 2004-2005." *Preface and Explanatory Notes*. <http://www.iiss.org/conferencepage.php?confID=61>.
- Jane's. "Defense Spending France, Jane's Sentinel Security Assessment – Western Europe." (March 18, 2005). <http://jdw.janes.com/> (accessed 22 March 2005).
- Jane's. "U.S. Military R&D, Contexts, Themes & Conclusions." (January, 1997). <http://jdw.janes.com/> (accessed 22 March 2005).
- Jackson, Richard and Neil Howe. *The 2003 Aging Vulnerability Index: An Assessment of the Capacity of Twelve Developed Countries to Meet the Aging Challenge*. Washington, DC: CSIS, 2003. www.csis.org/gai/aging_index.pdf (accessed 6 November 2004).
- Kennedy, Claudia. "The Age of Revolution." *Strategic Study Institute, U.S. Army War College, Letort Paper No. 3* (March 1998). <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).
- Kirk, Dudley. "Demographic Transition Theory." *Population Studies*, Vol. 50, No.3 (1996): 361-387.
- Kubosova, Lucia. "EU considers US-style green cards for migrants." <http://www.euobserver.com/?ais=18112> (accessed 13 January 2005).
- Lindstrom, Gustav. "The Headline Goal, (updated December 2004)", <http://www.iss-eu.org/esdp/05-gl.pdf> (accessed 25 February 2005).

- Martinsson, Örjan. "Population History." *Historical Atlas*.
<http://www.tacitus.nu/historical-atlas/population/centraleurope.htm> (accessed 01. January 2005).
- McIntosh, C. Alison. "Low Fertility and Liberal Democracy in Western Europe." *Population and Development Review*, Vol. 7, No. 2 (1981): 181-207.
- McIntosh, C. Alison and Barbara B. Crane. "Population Decline: A Threat to the West?" *Family Planning Perspectives*, Vol. 18, No. 5 (1986): 234-238.
- McMorrow, Kieran and Werner Roeger. "Economic and Financial Market Consequences of Aging Populations." *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No. 182 (April 2003).
- McMorrow, Kieran and Werner Roeger. "The Economic Consequences of Aging Populations: A Comparison of the EU, US and Japan." *European Commission Directorate-General for Economic and Financial Affairs*, Economic Paper No. 138 (1999).
- Mawdley, Joyslyn and Gerrad Quille. "Equipping the Rapid Reaction Force: Operations for and Constraints on a European Defence Equipment Strategy." Bonn International Center for Conversion (2003).
- Mönninger, Michael. "Demographie als Volkssport." *Die Zeit*, 10/2004.
- Moniac, Ruediger. "Germany: DCI suffers lack of funding" *Jane's Defense Weekly* (14 June 2000). <http://jdw.janes.com/> (accessed 22 March 2005).
- Murawiec, Laurent and David Adamson. "Demography and Security." RAND Conference Proceedings of a Workshop Paris, France November 2000.
<http://www.rand.org/publications/CF/CF169/CF169.pdf> (accessed 6 November 2004).
- National Intelligence Council. *Global Trends 2015: A Dialogue About the Future With Nongovernment Experts*. NIC 200-02, December 2000.
<http://www.cia.gov/cia/reports/globaltrends2015/> (accessed 6 November 2004).

National Intelligence Council. *Growing Global Migration and Its Implications for the United States*. NIE 2001-02D, March 2001.
http://www.cia.gov/nic/PDF_GIF_otherprod/migration.pdf (accessed 6 November 2004).

NATO Handbook 2001, Brussels: NATO Office of Information and Press, 2001

NATO. *New Threats and Challenges 2002*. http://www.nato.int/docu/comm/2002/0211-prague/in_focus/terrorism/index.htm (accessed 25 February 2005).

NATO. *Prague Summit Declaration*. Press Release (2002)127, 21 November 2002.
<http://www.nato.int/docu/pr/2002/p02-127e.htm> (accessed 25 February 2005).

Nichiporuk, Brian. *Regional Demographics and the War on Terrorism*. RAND Population Matters (2000).
<http://www.rand.org/publications/RP/RP1057/RP1057.pdf> (accessed 6 November 2004).

Nichiporuk, Brian. *The Security Dynamics of Demographic Factors*. RAND Population Matters (2000). <http://www.rand.org/publications/MR/MR1088/> (accessed 6 November 2004).

Nolting, Günther. Spokesman for defense issues of the FDP Fraction in the German parliament. Answer to a request by the author.

OECD Economic Outlook 76 Database, updated 22 December 2004.
http://www.oecd.org/document/61/0,2340,en_2649_201185_2483901_1_1_1_1,00.html (accessed 11. March 2005).

OECD. *A System of Health Accounts*. <http://www.oecd.org/dataoecd/49/51/21160591.pdf> (accessed 30 April 2005).

OSCE. *Demographic changes in the OSCE Region: Challenges and Responses (Selected aspects)*. Vienna: Office of the Coordinator of OSCE Economic and Environmental Activities, 20 October 2004. http://www.osce.si/docs/2004-11-08-trst-%208.in%209.11.2004%20-%203743_en.pdf

- Posen, Barry R. "Urban Operations: Tactical Realities and Strategic Ambiguities." in *Soldiers in Cities: Military Operations on Urban Terrain*, edited by Michael C. Desch. Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001. <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).
- Postel, Sandra L. and Aaron T. Wolf. "Dehydrating Conflict." *Foreign Policy*, No. 126 (Sep.-Oct., 2001): 60-67.
- Romm, Craig. "NATO in the 21st Century: Defeated by Demography?" *The San Diego Union Tribune*, 04 October 2002.
- Rutten, Maartje. "British-French Summit St-Mâlo, 3-4 December 1998." in *From St-Mâlo to Nice: European defence: core documents*. <http://www.iss-eu.org/chaillot/chai47e.html#3>.
- Rudolf Scharping, German minister of defense, "Meeting the Challenges of the Future – Germany's Contribution to Peace and Security in and for Europe," speech at the Center for Strategic and International Studies, November 23, 1998 in Daniel Gouré, "International Security and the Aging Crisis: A White Paper on Defense and the Global Aging Initiative," CSIS (December 2000).
- Scales Jr., Robert H.. *Future Warfare Anthology - Revised Edition*. Carlisle, PA: Strategic Study Institute, U.S. Army War College, 2001. <http://www.carlisle.army.mil/ssi/> (accessed 14 April 2005).
- Schmid, Josef. "Population Aging: Dynamics, and Social and Economic Implications at Family, Community and Societal Levels." *Otto-Friedrich-Universitaet Bamberg Bevoelkerungswissenschaft Bamberg, Germany*, CES/PAU/1998/6, (21 October 1998). <http://www.un.org/popin/regional/europe/> (accessed 6 November 2004).
- Schulz, Hagen. *States, Nations and Nationalism*. Malden, MA: Blackwell Publishers, 2002.
- Stockholm International Peace Research Institute. "Databases." *SIPRI data on military expenditure*. http://www.sipri.org/contents/milap/milex/mex_database1.html, (accessed 07 February 2005).

- Solana, Javier. "Europe Must Build Its Military Muscle." *Jane's Defense Weekly* (14 June 2000). <http://jdw.janes.com/> (accessed 22 March 2005).
- UNESCO. "Global Monitoring Report 2003/2004." http://portal.unesco.org/education/en/ev.php-URL_ID=24188&URL_DO=DO_TOPIC&URL_SECTION=201.html (accessed 06 January 2005).
- United Nations. "UN-Habitat." *United Nations Human Settlements Programme*. <http://www.unchsh.org/programmes/guo/table11.asp?countrycode=818> (accessed 10 February 2005).
- United Nations. "World Population Prospects: The 2002 Revision Population database." *United Nations Population Division*. <http://esa.un.org/unpp/Glossary.html> (accessed 01 January 2005).
- Valpolini, Paolo. "Interview with Antonio Martino, Italian Defense Minister." *Jane's Defense Weekly* (June 05, 2002). <http://www.Jdw.janes.com/> (accessed 22 March 2005).
- Van Hoof, H.. Speech by the state secretary for defence. February 28, 2002, Eindhoven Air Base. http://www.mindef.nl/nieuws/toespraken/280202_toespraak.html (accessed 16 April 2005).
- Weber, Eugen. *Peasants into Frenchmen: The Modernization of Rural France, 1870-1914*. Stanford, CA: Stanford University Press, 2002.
- Weiner, Myron and Sharon Stanton Russell. *Demography and National Security*. New York: Berghahn Books, 2001.
- Wilson, Chris and Gilles Pison. "More than half the global population lives where fertility is below the replacement level." *Population and Society*, No. 405 (October 2004).

Wolf, Charles, Jr. and Benjamin Zycher. *European Military Prospects, Economic Constraints, and the Rapid Reaction Force*. RAND National Security Research Division (2001). <http://www.rand.org/publications/MR/MR1416/> (accessed 6 November 2004).

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Prof. Donald Abenheim
Department of National Security Affairs
Naval Postgraduate School
Monterey, California
4. Prof. Robert E. Looney
Department of National Security Affairs
Naval Postgraduate School
Monterey, California
5. Oberst Hans-Eberhard Peters
Department of National Security Affairs
Naval Postgraduate School
Monterey, California
6. John Kraus, Colonel US Army (Ret)
Office of Institutional Research and Assessment
University of New Hampshire
Durham, New Hampshire
7. Dr. Ottmar Breuer
FAK LRT WE 8.2
Federal Armed Forces' University Munich
Neubiberg, Germany
8. Bundesministerium der Verteidigung
Fü S I 5
Bonn, Germany