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Germany is one of the major political and economic powers of the European continent and a historic leader in many theoretical and technical fields, and officially Germany is known as the Federal Republic of Germany, which is a federal parliamentary republic in west-central Europe. The country consists of 16 states, and its capital is the largest city Berlin. Germany covers an area of 357, 021 square kilometers (137, 847 sq mi) and has a largely temperate seasonal climate. With 81. 8 million inhabitants, it is the most populous member state in the European Union.

## 1. 1 Geographic location

Germany is in Western and Central Europe, with Denmark bordering to the north, Poland and the Czech Republic to the east, Austria and Switzerland to the south, France and Luxembourg to the southwest, and Belgium and the Netherlands to the northwest. It lies mostly between latitudes 47°and 55° N (the tip of Sylt is just north of 55°), and longitudes 5° and 16° E. The territory covers 357, 021 km2 (137, 847 sq mi), consisting of 349, 223 km2 (134, 836 sq mi) of land and 7, 798 km2 (3, 011 sq mi) of water. It is the seventh largest country by area in Europe and the 62nd largest in the world. Where Elevation ranges from the Alps mountains (highest point: the Zugspitze at 2, 962 meters / 9, 718 feet) in the south to the shores of the North Sea (Nordsee) in the northwest and the Baltic Sea (Ostsee) in the northeast. The forested uplands of central Germany and the lowlands of northern Germany (lowest point: Wilstermarsch at 3. 54 meters / 11. 6 feet below sea level) are traversed by such major rivers as the Rhine, Danube and Elbe. Glaciers are found in the Alpine region, but are experiencing deglaciation. Significant natural resources are iron ore, coal, potash, timber, lignite, uranium, copper, natural gas, salt, nickel, arable land and water. Most of Germany has a temperate seasonal climate in which humid westerly winds predominate. The climate is moderated by the North Atlantic Drift, the northern extension of the Gulf Stream, and the warmer water affects the areas bordering the North Sea; consequently in the northwest and the north the climate is oceanic. Rainfall occurs year-round, especially in the summer. Winters are mild and summers tend to be cool, though temperatures can exceed 30 °C (86 °F). The east has a more continental climate; winters can be very cold and summers very warm and long dry periods are frequent, where central and southern Germany are transition regions which vary from moderately oceanic to continental. In addition to the maritime and continental climates that predominate over most of the country, the Alpine regions in the extreme south and, to a lesser degree, some areas of the Central German Uplands have a mountain climate, characterized by lower temperatures and greater precipitation.

## 1. 2 Social Information

German social structure consists mainly of a large, prosperous central stratum containing about 60 % of the population. This stratum includes mid-level civil servants, most salaried employees, skilled blue-collar workers, and a shrinking pool of farmers. A smaller wealthier group consisting of an upper-middle class and an upper class offsets the poverty experienced by a poor lower class. Hence in terms of social indicators such as education, average income, and property ownership, Germany ranks among the world's leading countries. In terms of income, for example, in 1991 the average German family had a net monthly income of DM4, 905, second highest among members of the European Union. Most of the workforce is employed in the services sector. West Germany completed the transition from an industrial economy to one dominated by the services sector in the 1970s, and by the late 1980s this sector employed two-thirds of the workforce. In contrast, when the Berlin Wall fell, East Germany still had not made this transition. Because more of the workforce was engaged in industry and agriculture than in the services sector, its socioeconomic structure resembled that of West Germany in 1965. Rainer Geissler, a German sociologist, has examined his country's social structure in light of the economic changes that have taken place in the postwar era. Because of the growth of the services sector and the doubling of state employees since 1950, he has discarded earlier divisions of German society into an elite class, middle class, and worker class, with a small services class consisting of employees of all levels. He has replaced this division with a more nuanced model that better reflects these postwar changes. As the economy of the new Länder is incorporated into the western economy, its much simpler social structure (elite, self-employed, salaried employees and workers) will come to resemble that of the old Länder. According to Geissler, at the end of the 1980s West Germany's largest group (28 percent of the population) was an educated salaried middle class, employed either in the services sector or in the manufacturing sector as educated, white-collar employees. Some members of this group earned very high salaries; others earned skilled blue-collar wages. This professional class has expanded at the expense of the old middle class, which amounted to only 7 % of the population at the end of the 1980s. A less educated segment of the services sector, or white-collar employee sector, amounted to 9 % of the population. Also Geissler divided the working class into three groups: an elite of the best-trained and best-paid workers (12 %); skilled workers (18 %), about 5 % of whom are foreigners; and unskilled workers (15 %), about 25 % of whom are foreigners. Portions of this last group are living below the poverty line. Farmers and their families make up 6 % of the population. At the top of his model of the social structure, Geissler posits elite of less than 1 %. Germany has about 82 million inhabitants. It is by far the largest country in the EU in terms of population. Germany is a modern, cosmopolitan country. Its society is shaped by a plurality of life styles and truly different ethno-cultural diversity. As the forms of coexistence have become more varied, and the scope individuals enjoy has become greater. Traditional gender roles have been dispensed with. Despite the social changes, the family remains the most important social reference unit and young people have very close bonds with their parents

## 1. 3 Demographics Status

The demography of the Federal Republic of Germany is monitored by the " Statistisches Bundesamt" (Federal Statistical Office of Germany). The population of Germany is approximately 81, 859, 000 (November 30, 2011), making it the 16th most populous country in the world. Germany's population is characterized by zero or declining growth, with an aging population and smaller cohort of youths. The total fertility rate has been rated around 1. 4 in 2010 (the highest value since 1990) and has recently even been estimated at 1. 6 after accounting for the fact that older women contribute more to the number of births than in previous statistic models, and total fertility rates increased in younger generations. Fertility was closely linked to educational achievement (with the less educated women having more children than the educated ones). Persons who adhere to no religion have fewer children than Christians, and studies also found that among Christians the more conservative ones had more children than the more liberal one. The United Nations Population Fund lists Germany as host to the third-highest number of international migrants worldwide. More than 16 million people are of foreign/immigrant descent (first and second generation, including mixed heritage and ethnic German repatriates and their descendants). Where 96. 1% of those reside in western Germany and Berlin, and about seven million of them are foreign residents, which are defined as those not having German citizenship. Where, the largest ethnic groups of non-German origin are the Turkish. Since the 1960s, West and later reunified Germany has been attracting migrants primarily from Southern and Eastern Europe as well as Turkey, many of whom (or their children) over time acquired German citizenship. While most of these migrations had an economic background, Germany has also been a prime destination for refugees from many developing countries, in part because its constitution long had a clause giving a 'right' to political asylum, but restrictions over the years have since made it less attractive. Germany has one of the world's highest levels of education, technological development, and economic productivity. Since the end of World War II, the number of students entering universities has more than tripled, and the trade and technical schools are among the world's best. With a per capita income of about $36, 850 Purchasing power parity (in 2009), Germany is a broadly middle class society. However there has been a strong increase in the children living in poverty in Germany. While in 1965 one in 75 children was on the welfare rolls in 2007 one in 6 was. Those children live in relative poverty, but not in absolute poverty however. Germans also are very mobile; millions travel abroad each year. The social welfare system provides for universal health care, unemployment compensation, child benefits and other social programs. Due to Germany's aging population and struggling economy, the welfare system came under a lot of strain in the 1990s. This led the government to adopt a wide-ranging program of belt-tightening reforms, Agenda 2010, including the labor market reforms known as Hartz I - IV. There are three trends are characteristic of demographic developments in Germany: a low birth rate, increasing life expectancy and an aging society. For more than 30 years now Germany has been witnessing few births: With slight fluctuations, since 1975 the number of new born infants has been approximately 1. 3 children per woman. This means that for 35 years the generation of children has been smaller than that of their parents. High rates of immigration to Germany prevented the overall population from shrinking accordingly. At the same time, as in other wealthy nations, life expectancy has risen continuously, and is now 77 years for men and 82 years for women. The rise in life expectancy and, to an even greater extent, the low birth rates are the reason for the third trend: The ratio of young people in the overall population is decreasing, that of elderly people rising: In the early 1990s there were almost three people of an employable age for every person over the age of 60. In the early 21st century, the ratio was only 1 to 2. 2 and calculations indicate that within the next decade the ratio will already be less than 1 to 2. As such the aging of society is one of the greatest challenges facing welfare and family policy. For this reason the pension insurance scheme has long since been undergoing re-structuring: As a result of demographic trends the traditional" cross-generational contract " is less and less able to be financed, such that private individuals have to supplement it by making their own provisions for old age. In addition, family-related measures to increase the number of children, such as raising child benefit and increasing the number of kindergarten and crèche places, are also being implemented.

## Economic status

In the international arena German companies have an excellent reputation. They represent " Made in Germany", known as a seal of quality the world over. They represent innovation, quality and cutting-edge technology. Yet the world’s fourth largest economy does not consist solely of global players, but also of many world market leaders who are actually small and medium-sized enterprises, the powerhouse of the German economy. They all benefit from the sound economic conditions, not to mention the excellent qualifications of the workforce. Foreign investors also value this. Germany is one of the most highly developed and efficient industrial nations, after the USA, Japan, and China, have the world’s fourth largest national economy. With a population of 82 million Germany is furthermore the largest and most important market in the European Union (EU). The Germany economy focuses on industrially produced goods and services. In particular German mechanical engineering products, vehicles, and chemicals are highly valued internationally. Around one euro in four is earned from exports and more than every fifth job depends directly or indirectly on foreign trade. Having been " export world champion" six times in a row between 2003 and 2008, in 2009, with exports worth US$ 1, 121 billion, around one third of the gross national income, Germany was the second biggest exporter of goods worldwide after China (US$ 1, 202 billion). Germany’s share of total world trade is around 9%. Given its high focus on exports there is scarcely any other country than Germany so intertwined with the world economy and interested in open markets. The most important trading partners are France, the Netherlands, the USA and Great Britain. In 2009, goods and services worth EUR 82 billion were exported to France, EUR 54 billion to the Netherlands and the USA, and EUR 53 billion to Great Britain. In addition to trade with the original European Union member states, since the European Union’s expansion eastwards (in 2004 and 2007) there has been an increase in trade with the central and east European EU Member States. A good 10 % of all exports go to these countries. Overall the share of total German exports to the countries in the European Union is 63 %. The importance of trade and economic relations with emerging nations in Asia is growing continually. Asia is now the second most important market for goods from Germany. In 2009 14 % of German exports went to this region. China is the most important partner. Since 1999 Germany has also been China’s biggest European investor. Some 2, 500 German companies have investments in the country.

## 2- Demographic changes

Germany experienced a phase of demographic transition from 1800 to 1900 is considered by some European countries, where this phenomenon is usually defined as the transition process from (both) high to (both) low mortality and birth rates. This transition usually starts with a decreasing mortality rate is followed by a decline in the fertility rate after some time. these demographic changes is related to the per‐capita income level, which grows noticeably from the 1950s.

## 2. 1 Historical demographic situation

At the beginning of the 19th century most women in Germany died at an early age, and lifespans were shorter, as there was an average of five births per married woman. Where, during this time there was a different between the number of births and the number of children. While only half of all children born in Germany reached adulthood in the middle of the 19th century. Moreover, the number of births and that of children didn’t start to converge at the 20th century, this because of generations of women stood on the verge of a decline in the fertility rate. Accordingly, the average number of children per woman decreased dramatically from nearly 5 to around 2. Moreover, to avoid the growing acceptance of how germs spread disease, more focuses was put on hygiene, which limits the spread of diseases and contributed to a rise in life expectancy. There are two reasons for population ageing: Germany has had low birth rates for many years. After reaching a peak in the mid-1960s, known as the " baby boom", average birth rates have steadily declined. Since the mid-1970s, the birth rate in Germany has remained low at an average of 1. 4 children per woman. This is well below the rate of 2. 1 children needed to replace the parental generation. The low birth rate is due in part to a large proportion of women remaining childless, especially highly educated women; to childbearing at later ages; and to changing notions of the family. In addition, average life expectancy in Germany, as in other industrial countries, has steadily risen over the past 150 years by about three months per year. This increased life expectancy initially arose from a decline in child mortality. For more than six decades, however, it has reflected an increase in life expectancy at the oldest ages. This trend will continue. Where, the physical and mental health of an increasing number of people attaining very old age is also improving, as the number of years spent in good health is growing. In past decades, Germany had very high net migration, which reduced the impact of population ageing and delayed the process of population decline. Demographic change affects different regions to differing degrees. Some regions have lost population, while others have gained. Population ageing is taking place in all regions, at different rates. However, it appears that peripheral rural areas will be especially affected by demographic change. Many parts of eastern Germany have already seen significant population ageing and decline, magnified by internal migration. Rural and urban areas in western Germany are also increasingly affected by this trend. Family is central to demographic change. It is the place where affection, responsibility, cohesion and solidarity play a special role. Lifestyles and birth rates have changed over the past decades. This has been accompanied by a different notion of what family is. Along with the classic nuclear family, unmarried couples and single parent families have gained growing acceptance. An important factor in the decision to have children is being able to balance family and work commitments. One thing has not changed: Women still take on most of the family-related tasks and have to reconcile these with paid employment. A large number of government measures and benefits help families in various life situations and phases. In 2008, federal family benefits amounted to €114. 8 billion, of which €24 billion were cash benefits for families. Federal support for families takes the form of maternity, parental and child allowances; the recognition by the statutory pension insurance of years spent raising children; and coverage in the statutory health insurance for spouses and children at no extra charge. Low-income families are eligible for child supplements and housing allowance. Expanding the provision of child care is an important way to help balance family and work commitments. In addition to care for young children, more flexible care services are needed, such as all-day care for school-aged children. Nearly half of all families with school-aged children have a hard time finding a good balance between family and work commitments. The Federal Government supports in particular the expansion of early-childhood education and care, new alternatives for developing more family-friendly living and working conditions, and a family-centred human resources policy. As life expectancy has risen and people are remaining healthier as they age, they are able to remain active to higher ages. Germany cannot do without the experience and engagement of its older residents. Longer life expectancy changes intergenerational relationships within families (grandparents – grandchildren) and offers new possibilities for further employment and volunteering after reaching the official retirement age. In regions especially affected by ageing and population decline, engagement by older people in particular can help maintain key infrastructures. The necessary framework conditions need to be improved to enable people to pursue their desire for civic engagement regardless of their age. As well as population ageing and decline, two more trends are significant for demographics: First, lifestyles and families in Germany have become more diverse. Second, the population has become more ethnically diverse. The proportion of residents with an immigrant background has grown to nearly one-fifth of the total population. This trend will continue. The migrant population in Germany increased very strongly from the 1960s until the end of the 1970s. This was a result of work migration that Germany had explicitly invited during the times of the so-called " Wirtschaftswunder" (the German economic boom after World War II). From the early 1980s, the share of work migrants was rather stable until the early 1990s. Then a new increase could be observed until the mid-1990s. After that, the figures stabilized again. Roughly 9 % of the resident population does not originally come from Germany. The naturalization quota is rather low except for a peak in the mid-1990s. The areas and countries of origin of migrants to Germany are primarily European. About 14 % had migrated from EU countries in 2009 and another 40 % from other European for the vast majority of people countries. About 28 % came from Asian regions. Regarding countries of origin, however, Turkey stands out. Turkish immigrants amount to 26 of the 40 % points that came from European countries outside of the European Union Between 2002 and 2009 almost 1 million people have been naturalized, among them more than 300, 000 with Turkish origin . Since unification, about 3. 6 million people have been naturalized, and since 1981, 4 million altogether. This shows that the speed has accelerated. Between 1980 and 1990, 38, 000 were naturalized annually on average, but since 1990, the average number is about 173, 000. But the information about voting behavior of migrants is still rather limited. This certainly is related to the limited number of naturalizations as compared to the number of foreign people living in Germany. It implies limited numbers of respondents in surveys, and most surveys do not even bother to ask for a migrant background. The number of Germans immigrating to other countries has nearly tripled since the 1970s. In 2010, 141, 000 Germans were registered as leaving the country. At the same time, 115, 000 Germans moved to Germany, most of them returning home. The permanent emigration of Germans is often seen as a loss. For this reason, the Federal Government is working to make it easier for German emigrants to return to Germany. Integration policy is aimed at helping immigrants participate equally in social, economic and cultural life in Germany while strengthening social cohesion. The most important single federal measure of the nation-wide integration programme published in September 2010 is the integration course, a basic service for all new immigrants and those already living here. In 2008 and 2009, more people emigrated from Germany than migrated here (after statistical adjustment of the civil register), but in 2010, migrants to Germany again outnumbered those moving away by about 128, 000 persons. Rising birth rates or more migration can moderate the impact of changes in the age structure, though they cannot stop them, because ageing is already inherent in the current age structure of the population and is speeding up as the large age cohorts of the baby-boomer generation grow older. To deal with the growth-inhibiting impact of demographic change and to manage the threat of a shortage of skilled labour, we should take better advantage of existing labour and innovation potential and the potential of qualified immigrants. Labour potential can be mobilized in those groups which have so far been underutilized, such as women, older workers and persons with disabilities, as well as persons who have not yet succeeded in becoming permanently integrated in the labour marketA higher rate of female employment can be achieved above all with better and more flexible child-care services for preschool- and school-aged children, with family friendly working conditions, and with human resources policy oriented on equality. This applies above all to single parents. Improved career opportunities and possibilities for career advancement provide additional incentives for greater labour market participation by women. The most important approach to such incentives is targeted support for women when choosing a career, re-entering the labour market, starting a business and advancing to management positions. The potential of older workers has long been underestimated. They have a wide range of skills, abilities and experience. As the proportion of older workers increases, it is more and more important that jobs and working conditions be adapted to their needs. Ensuring safe and healthy working conditions, promoting health in the workplace, and organizing work in a way that recognizes individual abilities and avoids repetitive tasks keeps workers motivated and productive in every phase of their working life. Continuing professional development in the sense of lifelong learning and a work environment that promotes good health also help maintain productivity and retain older workers. With the right framework conditions and support, the great potential of workers with a disability can also be much better utilized. The Federal Government is supporting this with its " Inclusion Initiative", among other things. Less-skilled workers continue to bear the brunt of unemployment. Young people who have not finished school and young adults without an occupational qualification have significantly worse chances in the labour market. This is why the aim is to improve educational and occupational training options, thereby enabling young people to gain a foothold in the labour market. This is all the more important when the future age cohorts are shrinking. Increasing the educational levels of the population can have a major impact on growth. A high level of education increases work productivity and employment rates, and have a positive effect on production. The aim is to further raise the education level of the population, fight educational deficits and ensure equal educational opportunities. Demographic change poses a variety of new challenges to public education in Germany. The individual educational sectors need to adapt to the birth rates and ageing process, for example, in early-childhood education, all-day schools, and the transition to occupational training and in continuing professional development. In-service training and education also need improvement and should better cater for the needs of adults aged 30 and over, who may already have children. Despite the population decline caused by demographic change, investment in education will therefore remain at the same level and should even be increased in certain areas, in order to help people in all living and educational situations with appropriate educational measures. Population ageing and decline also have an impact on overall economic demand. On the one hand, changes in the rate of consumption and the ratio of consumption to savings can be expected. On the other hand, there will be significant shifts in the structure of consumption. Policy-makers can and will stay on top of these changes by raising awareness of the problem, pointing out possible solutions and improving framework conditions. The pension system is designed to ensure adequate income after retirement from active working life. The system rests on three pillars: statutory pension insurance, the occupational pension scheme and private pension plans. The most important pillar by far is the statutory pension insurance. Other important schemes include the civil servants’ pension scheme, retirement and surviving dependants’ pension for public service employees, farmers’ old-age security, artists’ social insurance and pension funds of the free professions. Demographic change creates challenges for the statutory pension insurance, which is a pay-as-you-go system. If the number of those paying into the system falls while the number of those drawing pension benefits rises, this would necessarily create financial pressure if counter-measures had not already been taken. The aim is to ensure sustainable funding for the pension system while appropriately balancing the interests of young and old. Against the backdrop of demographic change, the Federal Government has undertaken a series of reforms over the past two decades, affecting not only the statutory pension insurance but all aspects of the pension system. The aim of health-care policy is to continue to make sure everyone in Germany, regardless of income, age, health risks or place of residence, has access to the necessary medical care at a high level of quality and to medical progress. This requires reforms to the health-care system. With the Statutory Health InsuranceFinancing Act, which entered into force on 1 January 2011, the Federal Government has already set the course for sustainable financing of the statutory health insurance. In addition, the draft Act on Care Structures in the Statutory Health Insurance, which the Federal Government adopted in August 2011, lays the groundwork for high quality, local medical care in order to improve the concrete care situation of patients in economically disadvantaged regions and to counter the growing shortage of doctors in these regions.

## 2. 2 Current demographic situation.

The population of Germany has been shrinking since 2003 and is now 81. 7 million residents. The reason is that the number of people dying is higher and rising faster than the number of those being born. Since 2003, positive net migration (more people moving to Germany than moving away) has not made up the difference between the death rate and the birth rate. This trend will continue in the coming years. According to models of the Federal Statistical Office, Germany’s population will decline to 65-70 million by 2060. That would be as much as 17 million fewer residents, or a decline of 15% to 21% within 50 years. This trend is also accompanied by a decline in the working-age population. While the population is declining, the age structure is also shifting. Over the next two decades, the proportion of older persons in the total population will significantly expand. Today, the population group of children and young people under age 20 is roughly the same size as the group of persons aged 65 and older, and each group makes up about 20% of the total population. In 2030, the group of persons aged 65 and older will account for 29% of the total population; in 2060, every third person (34%) will be at least 65 years old. According to the estimates of the Federal Statistical Office model, life expectancy for persons born in 2060 will rise by eight years for males, to 85, and by seven years for females, to 89. 2. In the coming decades, demographic change will alter the framework conditions for growth and prosperity. Economic potential and growth heavily depend on having enough productive, skilled and innovative workers. But the level and structure of overall economic demand will change as a result of demographic changes. The size of the working-age population began to decline already ten years ago. This decline has so far been compensated by an increase in the number of women and older workers and by a reduction in unemployment in recent years. The working-age population (20 to 64) in Germany is currently 49. 8 million. Starting in 2015, this group is expected to noticeably decline in size. This process will further accelerate starting in 2020, when the baby-boom generation begins to retire. In 2030, the working-age population will probably have 6. 3 million fewer persons than in 2010. This is assuming annual net migration of 200, 000 persons starting in 2020. If fewer people immigrate to Germany, then the working-age population will decline even more. In recent years, the Federal Government has further developed the set of tools for active labour market policy on the basis of extensive research. In 2011, the Federal Government presented its strategy for ensuring the supply of skilled labour and describing its aims and measures. In addition to education, research and innovation play a significant role in compensating for shrinking production and growth potential. Research and innovation policy therefore has two major tasks: First, training and recruiting younger people to work in research and innovation; and second, increasing and adapting research and innovation activities. The Federal Government has set the goal of investing an additional 12 billion euros in the key fields of education and research in the period 2010 – 2013. One of the most important reforms with regard to statutory pension insurance, adopted in 2007, is the gradual raising of the official retirement age from 65 to 67 by 2029. This applies to persons in other pension schemes as well, such as federal civil servants. Rising the retirement age is an important pension policy measure; at the same time, it sends a signal to society and the private sector to further promote new attitudes towards older workers and age-appropriate working conditions. In this way, it also helps counter the threat of skilled labour shortages. In 2010, about 2. 42 million people required long-term care. According to current estimates, this number could rise to 2. 9 million by 2020 and to 3. 37 million by 2030. The growing number of older persons suffering from dementia constitutes a special problem. For centuries, German vital statistics did not collect births by biological order. Since 2008, German vital statistics includes this type of information. Another important amendment is that the micro-census will ask female respondents about the number of their biological children Age at first birth and childlessness The ground-breaking changes in the law will enable researchers to generate important structural fertility indicators, such as the mean age at first birth. The postponement of first birth is one of the most important changes in fertility behavior of the recent years. Germany has been a forerunner in this development, but official indicators documenting this process were lacking. Due to the amendment of the German Population Statistics Law, it is now possible to generate a (period) mean age at first birth. This measure is of great public interest. Furthermore, it is a measure that will enter international demographic statistics. In addition to the changes in the age at first birth, the level of childlessness is an indicator that is in great demand and is frequently discussed. However, the ultimate level of childlessness cannot yet be calculated based on German vital statistics. This gap in the vital statistics can be filled through other sources, however. The Frauenbefragung Geburten has been an important source of indicators of permanent childlessness. In future, the micro-census will provide this information, too. Fertility of migrants from 2008 onwards, the micro-census will enable researchers to generate the fertility indicators by the socio-economic characteristics of the respondents. This will also enable us to generate the total number of children by nationality and migration background. In addition to the micro-census, the Turkish sample of the Generations and Gender Survey will complement our understanding of the demographic behavior of foreigners and migrants. The fertility of migrants is an aspect worth pointing out, not only because this topic is of major scientific interest, but also because vital statistics are not very useful for understanding the fertility dynamics of foreigners and migrants. This pertains to the fact that population counts of foreigners in Germany have been imprecise. But this also relates to the fact that it is difficult to generate fertility indicators of a highly mobile population with aggregate level data. Panel studies in the field of family and fertility In the past, the Socio-Economic Panel (SOEP) has been the major panel study for family and fertility researchers, Although, this data provides a rich battery of socio-economic variables. Overall, the infrastructure for conducting fertility and mortality research has improved tremendously in recent years. Nevertheless, there are some " weak spots" in Germany’s data infrastructure, which we will discuss in the following. Family Change and Official StatisticsOfficial statistics have always been slow in catching up to changes in the family. For a long time, the official UN definition of what is a family ignored new family forms, such as non-marital unions with children. This has changed in the recent years. In the UN recommendation of what is to be included into the census, co-residential partnerships are named among the core concerns (UN 2006, 113). Germany will be able to provide counts on co-residential unions based on data from the micro-census. A drawback is that the question on the partnership status, which is needed to identify a non-marital union, is voluntary, and about 5% of respondents refuse to answer the question. Since the share of non-marital unions have become such an integral demographic indicator, it seems odd that partnership status is one of the few questions in the micro-census for which a response is not compulsory. A related issue concerns stepfamilies. Families in which children live with biological and/or non-biological parents are on the rise, and they pose important new social policy questions. However, we do not have an accurate account of the share of reconstituted families in Germany. In the census, more complex living arrangements, such as stepfamilies, cannot be identified (despite the fact that the UN (2006) request that this information be included in the census). Survey data, such as data from the Generations and Gender Survey, provide detailed information on family structure and living arrangements. However, sample sizes are too small to provide good " structural indicators" on the prevalence of reconstituted families. In the micro-census, it is difficult to identify " stepfamily constellations", because the kinship status of the household members is only surveyed in reference to the head of the household. It is difficult to make recommendations for resolving this problem. The household relationship matrix is usually seen as a method that is superior to survey living arrangements (Statistical Commission and UN Economic Commission for Europe/ Statistical Office of the European Communities; UN 2006, 107). If this method were introduced into the micro8 census, the share of stepfamilies in Germany could be established. However, this would obviously require a fundamental change in the micro-census questionnaire. Another solution could be to find out whether respondents may be asked if the stepparent, adoptive parent, or foster mother/father lives in the same household.

## 3- Demographic changes effects on socioeconomic aspects

## 3. 1 Demographic changes effects on Economics

Following the 2008-09 subprime crisis, the banking system was strengthened by substantial government efforts, including the setting up of the Federal Agency for Financial Market Stabilisation and the transfer of some institutions’ risky assets to bad banks (which significantly raised government debt in 2010). However, attention has now focussed on the vulnerability of the banking system to the sovereign debt crisis in some euro area countries. In addition, the banking system remains highly leveraged, where (non-risk weighted) the capital to total asset ratio was 4. 3% in 2010, the lowest among European countries; the ratio has decreased slightly in recent years, whereas in most other euro area countries it has increased. The difference between this leverage ratio and the ratio of regulatory capital to risk-weighted assets is among the highest in the euro area. This indicates a high vulnerability of the German banking system to financial market stress in case risk has not been appropriately assessed. However, it must be considered that international accounting standards allow for considerable netting of positions whereas in German national accounting rules this is not the case to such an extent. Balance sheet total therefore is - everything else equal - structurally higher for German banks. Furthermore, under the new Basel III capital requirements the largest German banks will have to increase their capital by at least EUR 50 billion, equal to half of their 2009 core tier capital. While German banks already have begun to increase their capital with respect hereto. Several reforms have been implemented over the last two years. For example, the Bank Restructuring Act implemented in January 2011 facilitates the recovery and reorganisation of systemically important financial institutions (SIFI) in a crisis situation. In addition, banks have to pay a specific annual levy in a restructuring fund. Also progress has been made in reforming banking supervision, including by improving the cooperation between the Bundes bank, whose macro prudential responsibilities will be enhanced, the regulator (BaFin), which will focus more on micro prudential supervision, and the government and by internally reorganising BaFin. Overall, the government should intensify discussions with the banking sector about how to ensure its adequate capitalisation and should stand ready to provide appropriate support. In particular, the Landesbanken, which still lack a viable business model, remain vulnerable due to their low capitalisation and profitability and will be especially affected by the regulatory increases in capital requirements. Some of the Landesbanken have already been restructured under the pressure1995 2000 2005 2010 and supervision of the European Commission, but a reform of the sector as a whole is still lacking. Efforts for a coordinated reform of this sector thus need to continue, including a reform of the savings With Germany being the fourth-largest economy in the world, its economic developments – and policy-making - have an impact on other countries, including through higher imports as domestic demand strengthens. However, trade growth plays a smaller role than is often assumed; the impact of higher growth in Germany on other countries is the lowest among large economies. Also, trade links to the larger euro area countries are limited. Where, exports to Germany account for barely 3% of GDP in France, Spain and Italy. As import propensities for domestic demand are rather small in Germany (but higher for exports), underlining that a rise in domestic demand is unlikely to translate into much growth support for other countries. Given the weakness in trade links, fiscal consolidation in Germany will have only minor trade-related repercussions on other economies. Germany acts more as a transmitter to other countries of external shocks from the US and Asia due to its strong position as an exporter– to which it is more exposed than other economies - rather than being a source of shocks. This is particularly important for smaller euro area countries, with exports accounting for more than 10% of GDP in Austria, the Netherlands and Slovakia - reflecting the tight integration of supply chains with those countries. In other words, economies forming a joint supply base with Germany are currently more dependent on the impact of world trade on the German export sector, than on German domestic demand. However, if efforts to boost trend growth become successful via invigorating dynamism in the domestic sector, then demand growth spill overs to other countries may become more important, because a more dynamically growing domestic sector, driven by investment and innovation will generate additional employment and income generation opportunities and become a new source for import demand. By improving its own economic performance, Germany would become a growth locomotive for Europe. However, the fairly tight correlation of business cycles between Germany and other euro area countries suggests that the trade channel is complemented by other forms of transmission, such as the monetary policy channel. Given its size, the German economy affects euro area aggregates more than other countries, thereby influencing monetary policy decisions. As Low inflation in the first half of the past decade has thus kept interest rates lower than otherwise, boosting growth in smaller, fast-growing countries. The financial system is another channel of spill overs. Where lending of German banks to peripheral countries rose sharply in the years prior to the crisis; consolidated claims of German banks on Spanish banks reached almost 25% of Spanish GDP. Channelling funds abroad through the banking system thus transmitted high savings in Germany into growth in other countries. With public debt having increased by almost 20% of GDP since 2007, to 83% of GDP in 2010 and in view of a significant increase in age-related costs over the coming years, fiscal consolidation is needed over the medium term. The new fiscal rule requires measures to lower the central government deficit to 0. 35% of GDP in structural terms by 2016. The planned consolidation measures, amounting to EUR 80 bn (3. 2% of GDP) until 2014, implemented over time to reach a reduction in the federal budget deficit of 1% of GDP in 2014, are consistent with this rule. The rule allows the automatic stabilisers to work and, in view of the weaker growth outlook and the associated uncertainties, the authorities should let them do so. However, if the economy were to be significantly weaker than projected, it would be appropriate to provide a temporary stimulus to demand in a way that does not harm the credibility of the fiscal rule domestically and internationally. The structural aspects of the consolidation measures are welcome and their implementation is supported by the introduction of a top-down approach for budget preparation since 2011, as recommended in OECD (2010a). Two-thirds of the measures are expenditure-based cuts with the largest item being the reduction of social security and unemployment benefits, including the readjustment of parental and housing benefits. On the revenue side, the government has announced a number of new taxes including a nuclear fuel tax and a bank levy. Some measures have already been introduced in 2011, such as a tax on air travel. However, are more uncertain, such as the planned introduction of a financial transactions tax, revenues from the nuclear fuel tax (in doubt given the decision to accelerate the phase out of nuclear energy) or the global expenditure cut in 2014 worth 0. 2% of GDP. The expected revenues from these measures and how they will be achieved should be further specified. In addition to reducing the structural deficit, there is still the need for a reform of the tax structure, as argued in the previous Survey (OECD, 2010a). Taxation remains skewed towards labour, notably because of high social security contributions. This is unfortunate, as cross-country evidence indicates that tax systems which put more weight on less mobile bases, notably consumption taxes and recurrent taxes on immovable property, produce better growth outcomes. Given this, revenues from consumption taxes should be increased. While the standard VAT rate has been increased in the past to 19%, it remains somewhat lower than in many other European countries. However, the main challenge is the taxation of many goods at a reduced rate. The tax losses resulting from the application of reduced rates amount to almost 1% of GDP (OECD, 2008a). Reduced rates should be phased out so as to broaden the tax base. Since such a reform might require compensating transfers to low-income households, the net revenue gain of such a measure would be reduced. Furthermore, taxation of real estate accounts for just over 1% of total revenues compared to 3% in the OECD on average (and ½ per cent of GDP versus 1% of GDP). The low level of revenues reflects primarily a tax base which relies on the values determined in 1964, an arrangement that has been criticised by the Federal Fiscal Court . While it is true that municipalities in Germany finance several tasks through fees rather than through tax revenues, the overall level of user fees as a share of GDP, both at the local level and across all layers of government, is slightly below the OECD average. The argument for raising the importance of real estate taxes goes beyond their less adverse growth effects compared to other taxes. Such taxes could provide a comparatively stable revenue source for municipalities, at least compared with their current main source of revenue, the local trade tax. Reforms to the real estate tax should include moving towards actual prices for evaluating the tax base of the tax on land and buildings. Also, tax rates could be raised further, although this is within the competence of municipalities.

## 3. 2 Demographic changes effects on Employment

Regardless the above-average fall in real GDP during the crisis, the unemployment rate in Germany increased by only ½ percentage points during the crisis, compared to 3% in the OECD on average. This unemployment reaction was also highly unusual relative to past recessions in Germany; taking the past output-unemployment relationship as a guideline, one would have expected the unemployment rate to rise by almost 3 % points. Some of the factors behind this outcome are Germany-specific to this recession. As the sectorial impact was particular in that it was primarily the German manufacturing sector which was affected while the more labour-intensive sectors, such as construction, were not. Also, employment in public services continued to increase. Furthermore, labour shortages were evident in some sectors ahead of the crisis, leading some companies to hold on to their employees. Moreover, the labour force was growing less than in other countries due to population ageing, thus limiting the hike in the unemployment rate. However, none of these factors can fully explain the benign labour market outcome during the crisis; indeed, evidence suggests that structural factors played a significant role, notably policies to adjust labour via changes in hours worked and the beneficial effects of past reforms on work incentives. The short-time work scheme - whereby part of an employee’s salary lost through fewer working hours is replaced by a transfer from the labour office - also helped to prevent layoffs, notably after the government substantially increased the generosity of the scheme. For instance, employers’ obligations to pay social security contributions on the income lost through short-time work were reduced while earned entitlements from health unemployment- and pension insurance remained unaffected. Eligibility to use the scheme was widened by relaxing some of the requirements. Overall, the use of short-time work explains around one third of the reduction in working hours in 2009. Structural improvements in labour market policy past labour market reforms, arguably the most significant among OECD countries during that time, significantly changed labour market institutions in Germany with positive effects on the reaction of unemployment during the crisis. A series of reforms starts in 2002, notably the Hartz reforms, strengthened work incentives and improved job matching. This had beneficial effects on the structural rate of unemployment over time and throughout the crisis, offsetting some of the cyclical increase in the unemployment rate that would otherwise have happened. Also - and probably related to the downward movement of structural unemployment - wage moderation in the years leading up to the crisis. In addition, several options for early retirement were phased out in the years leading up to the crisis, thus making it more costly for employers to arrange consensual job-separations for older workers during this recession. Employment rates of older workers in Germany have increased by 20 % points over the past decade in response to a series of reforms in the early 2000s limiting early retirement options. While the employment rate for those aged 55-64, at 57% in 2010, exceeded the OECD average of 54%, Germany should aim to catch up with the best performing countries given the seriousness of its ageing problem, where, Sweden, Norway and New Zealand have rates around 70%. Activating the old-age population requires reforms raising both the supply and the demand for older workers. On the supply side, incentives for continued work should be improved further. To this end, penalties for drawing a pension before the statutory pension age should be raised to the actuarially neutral level. Reducing the duration of unemployment benefits for those aged 58 and above should also be considered, for example by reversing the lengthening from 18 to 24 months that was decided in 2007 or by equalising the duration across all age groups. Finally, the pension system could be made progressive, like raising the value of pension points for low income workers at the end of their career, to both avoid old-age poverty and discourage low-income workers from early retirement. These measures should be usefully complemented by demand side measures. The wage premium of older workers relative to young ones is one of the highest among OECD countries and cross-country comparisons show that this reduces the chances of older workers being hired. Social partners should be encouraged to assess in how far current wage schemes inhibit older worker employability. Also, participation in lifelong learning has a positive impact on the employability of older workers. Given that only 30% of workers aged 55-64 currently participate in training or education in Germany, compared to 60% in Sweden, such activities need to be expanded. Raising education outcomes would also contribute to labour participation over a working life: across OECD countries, employment rates for tertiary graduates are around 10 % points higher than for those with upper secondary education (including those with vocational training) and this difference becomes more marked for older workers. There have been significant efforts over the past years to facilitate the use of fixed-term contracts, which increased employers’ flexibility and created stepping stones into permanent employment (around half of all workers on fixed-term contracts obtain regular contracts after the limitation period has ended. However, it is well known that employment protection legislation can be a factor behind labour market duality, notably if protection of permanent and fixed-term contracts differs sharply. Fixed-term employment can have adverse effects on the long-run employability, especially for young workers, notably because firms are less likely to invest in their training (OECD, 2004). It also contributes to higher income inequality as fixed-term workers tend to earn less than permanent ones. Germany has substantially liberalised fixed-term work contracts since the mid-1990s to well beyond the OECD average, while protection of regular employment remains among the strictest in the OECD. To lower the risk of duplication in the labour market, the protection of permanent work contracts should be lowered along the lines suggested in OECD (2010a), such that moving towards a unified job contract with the degree of protection rising with tenure. Unfortunately, net migration flows to Germany have declined over the last decade; immigration of workers accounts for only a small share of all immigration, and the proportion of highly educated among migrants is lower in Germany than in many other OECD countries. This outcome reflects a host of factors, such as language and other problems of integration. In this respect, the recent legislation facilitating the recognition of foreign credentials is a step in the right direction. However, hurdles to integration and immigration remain significant and further reform appears warranted. So far, the number of inflows coming from EU member states has been low even after the opening up of the labour market in May 2011. The focus should therefore be on appealing a greater number of, in particular high-skilled, EU-citizens and on making immigration easier for non-EU immigrants with skills that cannot reasonably otherwise be found in Germany. In case employers intend to hire high-skilled migrants from non-EU countries, they are faced with a labour market test where they need to prove that they cannot fill the position with a domestic worker or EU national. The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. As in the 2010 HDR a long and healthy life is measured by life expectancy, access to knowledge is measured by: i) mean years of adult education, which is the average number of years of education received in a life-time by people aged 25 years and older; and ii) expected years of schooling for children of school-entrance age, which is the total number of years of schooling a child of school-entrance age can expect to receive if prevailing patterns of age-specific enrolment rates stay the same throughout the child's life. Standard of living is measured by Gross National Income (GNI) per capita expressed in constant 2005 PPP$. To ensure as much cross-country comparability as possible, the HDI is based primarily on international data from the UN Population Division, the UNESCO Institute for Statistics (UIS) and the World Bank. As stated in the introduction, the HDI values and ranks in this year’s report are not comparable to those in past reports (including the 2010 HDR) because of a number of revisions done to the component indicators by the mandated agencies. To allow for assessment of progress in HDIs, the 2011 report includes recalculated HDIs from 1980 to 2011. The HDI is an average measure of basic human development achievements in a country. Germany’s HDI value for 2011 is 0. 905—in the very high human development category—positioning the country at 9 out of 187 countries and territories. Between 1980 and 2011, Germany’s HDI value increased from 0. 730 to 0. 905, an increase of 24. 0 per cent or average annual increase of about 0. 7 per cent. The rank of Germany’s HDI for 2010 based on data available in 2011 and methods used in 2011 is 9 out of 187 countries. In the 2010 HDR, Germany was ranked 10 out of 169 countries. However, it is misleading to compare values and rankings with those of previously published reports, because the underlying data and methods have changed, as well as the number of countries included in the HDI. reviews Germany’s progress in each of the HDI indicators. Between 1980 and 2011, Germany’s life expectancy at birth increased by 7. 2 years, mean years of schooling increased by 6. 5 years and expected years of schooling increased by 1. 3 years. Germany GNI per capita increased by about 68. 0 per cent between 1980 and 2011. The Gender Inequality Index (GII) reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity. Reproductive health is measured by maternal mortality and adolescent fertility rates; empowerment is measured by the share of parliamentary seats held by each gender and attainment at secondary and higher education by each gender; and economic activity is measured by the labour market participation rate for each gender. The GII replaced the previous Gender related Development Index and Gender Empowerment Index. The GII shows the loss in human development due to inequality between female and male achievements in the three GII dimensions. Germany has a GII value of 0. 085, ranking it 7 out of 146 countries in the 2011 index. In Germany, 31. 7 per cent of parliamentary seats are held by women, and 91. 3 per cent of adult women have reached a secondary or higher level of education compared to 92. 8 per cent of their male counterparts. For every 100, 000 live births, 7 women die from pregnancy related causes; and the adolescent fertility rate is 7. 9 births per 1000 live births. Female participation in the labour market is 53. 1 per cent compared to 66. 8 for men. In comparison France and United Kingdom are ranked at 10 and 34 respectively on this index.

## 3. 3 Demographic changes effects on Health

The impact of population shrinkage, coupled with ageing, spells big problems for pensions, health and welfare systems. The probability of needing health and long-term care increases with age, with most care needs concentrated during the final years of life. In the political debate, population ageing is usually considered as the main driver of the steady growth of per capita health care expenditures in the developed countries observed in the past and expected in the future. The main consumers of health and long-term care today are elderly people, whose projected increasing numbers will result in greater demand for these services. Although age in itself is not the only factor influencing healthcare spending (though it does serve as a proxy for a person's health status), projections illustrate that an ageing population will bring about pressure for increased public spending on health and long-term care. With a growing proportion of older and very old people, the health-care system will have to deal with higher expenditures and shrinking revenues. The reason for higher health-care expenditures is the growing need for health care, especially for older people. Another factor is advancements in medical technology, which also drive up costs. The aim of health-care policy is to continue to make sure everyone in Germany, regardless of income, age, health risks or place of residence, has access to the necessary medical care at a high level of quality and to medical progress. This requires reforms to the health-care system. In addition, demographic change will gradually limit the scope for future employment growth. Declining employment at a time when the number of older people in need of adequate pensions and health and long term care is rising will make it a challenge to provide sufficient resources for social protection in a sustainable way. Future ability to provide the ageing population with adequate pensions will crucially depend on whether the effective retirement age can be raised and the pension systems adapted to increasing life expectancy, thereby making the relationship between contributions and benefits transparent. Two important outcomes of population ageing are the changes in the age structures, as well as the overall decline in the size of the working population. These factors combined pose increasingly more serious problems with the sustainability of social security and welfare systems, most notably the pay-as-you-go pension schemes. This process will likely result in two further problems: a decrease in the income of the elderly (pensioners), as well as an increase in the overall economic burden on the working population (intergenerational transfers) to provide means for the aged population.

## 3. 4 Demographic changes effects on Education

Demographic change poses a variety of new challenges to public education in Germany. The individual educational sectors need to adapt to the birth rates and ageing process, for example, in early-childhood education, all-day schools, the transition to occupational training and in continuing professional development. In addition to education, research and innovation play a significant role in compensating for shrinking production and growth potential. Increasing the educational levels of the population can have a major impact on growth. A high level of education increases work productivity and employment rates and has a positive effect on production. The aim is to further raise the education level of the population, fight educational deficits and ensure equal educational opportunities. In addition, according to population projection, a large decrease in the student cohort should translate into an important increase in education spending per student, decrease in the student to teacher's ratio, decrease in the student to schools ratio and decrease in the student to class ratio.

## 4- Expected scenarios for Germany Demographic status

Three trends are characteristic of demographic developments in Germany: a low birth rate, increasing life expectancy and an aging society. Continuing low birth rates, the baby-boomer generation has had fewer children than previous generations, as a result of many factors: difficulties in finding a job, the lack and cost of housing, the older age of parents at the birth of their first child, working life and family life choices. Fertility is below the population replacement level. Continuing increases in longevity as a result of considerable progress made in health care and quality of life: healthy life expectancy is still rising. This trend should continue, with the gap between male and female life expectancy closing. Aging society, Increasing life expectancy and low fertility rates lead to an aging population. For many, the prospect of Germany's greying population is a cause of concern, and sometimes even fear. Such change brings huge challenges. How will shrinking workforce provide adequate incomes and health and social services not only for itself and its children, but also for an ever larger number of old and very old people? The population forecast is an attempt to obtain information regarding the future size and structure of the population. This section contains an analysis of future trends in population size and structure in Germany. Firstly, this section describes the assumptions on fertility, life expectancy and Migration which formed the basis for the projection. The following part discusses the results, quantifies future changes in the size and age structure of Germany’s population.

## 4. 1 Methodology and assumptions

Population projections have been prepared based on Spectrum program (DemProj model). DemProj requires information on fertility, mortality and Migration as they are the main drivers of demographic change. The assumptions on fertility, mortality and Migration will be discussed below.

## 4. 1. 1 Fertility

For several decades, fertility has been at a low level in Germany. The number of children born has not been sufficient to replace the generation of their parents. In order to reach a situation in which the population fully replenishes itself, each woman must give birth to 2. 1 children. Three scenarios regarding the future development of the total fertility rate were derived: The first scenario (Positive Scenario) is that the number of children per woman will rise to 2. 1 (replacement level) by 2060. It must be emphasized that this scenario can be achieved only if there is interference from the State to promote demographic renewal. The second scenario (Current situation with no changes) is that the number of children per woman will remain constant at the level of 1. 36, which is observed in 2011. The third scenario (Negative scenario) is that the number of children per woman will slightly fall to 1. 0 by 2060.

## 4. 1. 2 Mortality

Mortality is described in DemProj through two assumptions: life expectancy at birth by sex, and a model life table of age specific mortality rates. Life expectancy at birth is the average number of years that a cohort of people would live, subject to the prevailing age specific mortality rates. It is assumed that life expectancy will increases by about 6. 4 years for men and 5. 6 years for women between 2011 and 2060. That is life expectancy will be 84. 1 years for men and 88. 3 years for women by 2060 (according to estimates of the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat) for the three scenarios. The mortality input to DemProj, life expectancy at birth, indicates overall mortality in a population. But Demproj also needs the pattern of mortality in order to produce mortality rates by age group. Specifically, the rates required by DemProj are survival ratios, which will survive one age group into the next five year group. Model life table is assumed to be Coale-Demeny west.

## 4. 1. 3 Migration

Immigration is singled out as the sole mitigating factor, seen as crucial to maintaining population growth. However, this probably will not be enough to reverse the trend of population decline in many countries. In order to study the demographic changes in the future without the impact of migration, it is assumed that the net number of migrants to be zero. Table (1) summarizes previous assumptions concerning fertility, life expectancy and Migration.

## Table (1)

## Assumptions of expected scenarios for Germany Demographic status

## Assumptions

## First scenario (Positive Scenario)

## Second scenario (Current situation with no changes)

## Fertility

The total fertility rate will increase to a level of 2. 1 children per woman by 2060The total fertility rate will remain almost constant at a level of 1. 36 children per woman until 2060

## Life expectancy at birth (years)

## Males

Gradual increase to reach 84. 1 years by 2060

## Females

Gradual increase to reach 88. 3 years by 2060

## Model life table

Coale-Demeny west

## International migration

It is assumed to be zero, to exclude the impact of migrationSource: Spectrum Assumptions

## 4. 2 Population projection

This part discusses the results of population projections between 2011 and 2060 according to the three scenarios discussed above. It provides information about future changes in the size and age structure of Germany’s population.

## 4. 2. 1 Population trends in the Course of the Next 50 Years

Germany’s population has declined since 2003. This decline will continue according to the three scenarios. The total population size is envisaged to decline from 82 million in 2011 to 63, 9 million in 2060 (First scenario), 56. 3 million (Second scenario), 53. 2 million (Third scenario). i. e. the total population size will decrease by about 22% (First scenario), 31% (Second scenario), 35% (Third scenario).

## Table (2)

## Total population by variant (thousands)

## year

## First scenario

## Second scenario

## 2011

81, 99381, 993

## 2015

80, 78780, 711

## 2020

79, 20578, 863

## 2025

77, 62376, 858

## 2030

75, 98374, 679

## 2035

74, 07372, 136

## 2040

71, 87469, 189

## 2045

69, 47165, 872

## 2050

67, 15562, 426

## 2055

65, 30259, 225

## 2060

63, 87856, 266Source: spectrum estimations

## 4. 2. 2 Changes in the Age Structure

All the variants indicate a strong tendency towards population ageing in the coming decades. While the group of 15 to 64 year-olds will shrink in the same period. The proportion of people aged 65 and over will continue to increase. Hence, in future the population will be characterised – even more strongly than in the past – by the presence of older people. Whilst approximately 20% of the population were at least 65 years old in 2011, this rate is expected to rise: First scenario: Percentage of population aged 65+ is expected to rise to 30% by 2030, and to 31% by 2060. While the group of 15 to 64 year-olds will shrink 12 percent in the same period. Second scenario: Percentage of population aged 65+ is expected to rise to 31% by 2030, and to 35% by 2060. Approximately more than one third of the population (35%) in Germany will then be of retirement age. While the group of 15 to 64 year-olds will shrink 11 percent in the same period. Third scenario: Percentage of population aged 65+ is expected to rise to 31% by 2030, and to 37% by 2060. While the group of 15 to 64 year-olds will shrink 11 percent in the same period. According to the first scenario, the proportion of people aged fewer than 15 will continue to increase, while decreasing for the second and third scenario.

## Table (3)

## Population by age groups (%)

## year

## Age

## under age 15

## age 15-64

## First scenario

## 2011

1366

## 2035

1357

## 2060

1654

## Second scenario

## 2011

1366

## 2035

1158

## 2060

1155

## Third scenario

## 2011

1366

## 2035

1058

## 2060

855Source: spectrum estimations

## Figure (1)

## Percentage of population aged 65+

## Second scenario (2060)

## Second scenario (2035)

Source: spectrum estimationsSource: spectrum estimations

## Population pyramid

For a long time, the current population structure has deviated from the ‘ classic’ population pyramid shape where children represent the strongest cohorts and the older cohorts gradually decrease in size as a result of increasing mortality. Today Germany’s population structure resembles a ‘ dishevelled fir tree’, rather than a pyramid. The middle-aged cohorts are particularly large while the groups of older and younger people are smaller. Figure (2) shows how the form of the age pyramid is expected to change as the bulge representing the baby-boom cohorts becomes older. According to the second and third scenarios, by 2060, the large birth cohorts will move further upward, become sparser and will finally be replaced by smaller cohorts. At the same time, the relations between the different age groups will change significantly.

## Figure (2)

## Population by age groups and sex

## Base year (2011)

Source: spectrum estimations

## Second scenario (2060)

Source: spectrum estimations

## Dependency ratio

The dependency ratio is used as indicator of the potential level of support needed by young people (aged 0-15) and/or older people (aged 65 or over) from the population of working age. The ratio is expressed in terms of the relative size of the young and/or older population to the population of working age. In 2011, the dependency ratio of Germany was 51 %. This means that Germany had around 2 persons of working age for every person aged 65 years or over. The dependency ratio will reach around 86% in 2060 (first scenario), 83% (second and third scenarios). The old-age dependency ratio (number of people over 65 divided by the number of people aged 15-64) will reach around 67% in 2060 (up from 30% in 2011).

## Table (4)

## Dependency ratio by variant (%)

## year

## First scenario

## Second scenario

## 2011

5151

## 2015

5151

## 2020

5353

## 2025

5957

## 2030

6865

## 2035

7673

## 2040

7875

## 2045

7976

## 2050

8178

## 2055

8582

## 2060

8683Source: spectrum estimations

## Median age

The change in the median age of Germany population also provides an illustration of population ageing. The average age of Germany is now just over 45; this will be 48 by 2060.

## Table (5)

## Median age by variant (%)

## year

## First scenario

## Second scenario

## 2011

4545

## 2015

4646

## 2020

4848

## 2025

4849

## 2030

4950

## 2035

5051

## 2040

5152

## 2045

5153

## 2050

5053

## 2055

4954

## 2060

4854Source: spectrum estimations

## 4. 2. 3 Key areas for policy actions

In its 2006 Communication, the European Commission identified five key areas for policy action: Helping people to balance work family and private life so that potential parents can have the number of children they desire. Improving work opportunities for older people. Increasing potentially productivity and competitiveness by valuing the contributions of both older and younger employees. Harnessing the positive impact of migration for the job market. Ensuring sustainable public finances to help guarantee social protection in the long-term.

## 5-Conclusion

The situation of Germany in comparison with the other European countries is utterly distinctive in many aspects; the German model represents a totally different demographic model, the total difference in the ages groups and the lower mortality rates levels reflects the negative outcomes of the high development upon economies, it is clear that the impacts of high economic developments is damaging if exceeding the normal rates , especially when it results in the total change in the population structure driven by those demographic changes. Going deeper to discuss the economic changes, it is obviously shown that the German economy had not suffered till now from the negative impacts of the change in the age structure , but even in the near future this will be having a greater effect upon the economy as a whole , the impact of the increase in the elder age groups starts from the decrease in the GDP due to the decrease in the employment levels yet there is still a plenty of idle factors of production other than human capital, also , the decrease in the mortality rates impose on the economy to increase spending more and more upon healthcare services provided for elder people as it is known that the percentage of elders spending on healthcare is higher that the spending by lower age groups, this implies that Germany in the long run will be forced to direct the most of their governmental budgets for supporting elders in areas like pensions and healthcare. For the contemporary situation and with a discrete review to the future scenarios we can see that the changes in the age structure will result in an increase in the dependency rates given the occurrence of all scenarios the levels of the per capita gross national income GNI will significantly decrease by the notion of that increase in the dependency rates and hence this would decrease the standard of living for the country, sooner or later the demographics under all previously shown scenarios will lead to that increase in the dependency rates. Finally, we can summarize all the previous information discussed under the topping of ringing an alarm bell for the negative impacts of the very high rates of economic developments upon the global economy, the impacts of the rapid developments if spread widely upon the planet maybe representing a very risky indication upon the human species because it will utterly result in the decrease in birth rates and hence this would result in a long run in the ending of that family from the planet.