

The Demographic Change in Germany: Implications for the Pension Scheme

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Abstract Similar to other advanced industrialized countries, Germany's low population growth and aging workforce put considerable pressure on its national pension system. This chapter begins with an overview of the country's changing demographics and the pressures they place on the pension system. Next, the chapter reviews some of the major reforms that have been implemented to relieve the strain. The closing section considers several policy strategies that might improve the country's demographic profile and ensure proper functioning of the pension system. Immigration reforms, family support policies, reduction of future pension obligations and public awareness campaigns are among the most likely measures to improve the pension system performance in the long-run.

1 Introduction

In 1986, Dr. Norbert Blüm, Germany's former secretary of labor (1982 to 1998), famously declared, "The pension is secure" (Deutscher, 2012). However, his words may no longer hold for the German pension scheme because, like many other industrialized countries, Germany is suffering from an aging population. Across the European Union, populations are aging due to low birth rates, longer life

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expectancy and changing family structures. These factors have contributed to a clear decline in the populations of nearly all EU members.

Germany, in particular, must deal with negative population growth rate as a result of high mortality rates and low birth rates, since its workforce is shrinking and many of its elderly citizens live in poverty. This places new demands on the health care system to provide appropriate medical care for the elderly. Moreover, the aging society and lack of labor force puts the country at risk of increasing unemployment. Major changes in the pension system in Germany have already been done in order to keep the system going. This chapter considers Germany's changing demographics and what implications that has for the country's pension system. The following section provides an overview of Germany's demographic conundrum, as well as the origins and current state of the national pension system. The third section of the chapter assesses the effectiveness of the current pension reforms, which have been implemented to deal with the problems. The fourth section discusses the feasibility of several new alleviatory policies. The fifth section concludes the chapter.

2 Demographic Situation in Germany

2.1 Current Situation and Forecast

The Federal Statistical Office of Germany reported a population of over 80 million in 2012. In the same year, the total fertility rate was 1.4 children per woman or 8.4 children per 1,000 inhabitants, and the mortality rate was 10.8 per 1,000 inhabitants (Federal statistical office, 2014). Excluding immigration, this means that for every 1,000 inhabitants there were 2.4 more deaths than births in 2012. Table 1 contains a summary of Germany's population statistics in 2012. Although the country is growing in absolute terms, its native population is clearly shrinking.

The decline has been under way for a number of years, and the population is expected to fall to 65 million by 2060 (Federal Statistical Office, 2009).

Immigration is certainly an important element in the country's demographic change. In 2012, over one million immigrants moved to Germany and around 700,000 emigrated. Most of the inflow was made up of people from Eastern Europe, particularly from Poland and Romania, though many people also immigrated from Italy, Spain and Greece, which was likely due to the economic crisis in those countries (see Federal Statistical Office, 2013). The issue of immigration will be revisited in detail in the fourth section (Fig. 1).

Age structure is another important demographic characteristic. Figure 2 shows the progression of age structure in Germany from 1950 through 2100. The graphics illustrate a transformation from a triangular to a rectangular composition. Germany's aging population segment (people around 50 years old) is clearly visible in the graphic for 2010. In the near future, the proportion of older to younger people will rise considerably (United Nations, 2014).

Table 1 Key population data for Germany in 2012

Total population	80,500,000
Live births	673,544
Deaths	869,582
Live births—deaths	−196,038
Net migration	368,945
Populations growth—absolute	172,907

Source Own diagram based on figures provided by the Federal Statistics Office of Germany, 2014

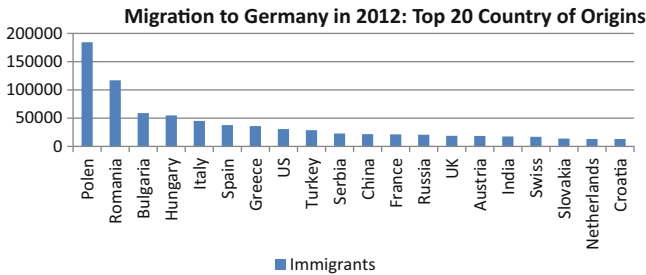


Fig. 1 Migration to Germany 2012: country of origins (Source Own diagram based on figures provided by the Federal Statistics Office of Germany, 2013)

Figure 3 shows the Federal Statistical Office population forecast from 2008 to 2060. Over the indicated period, the number of seniors aged 80 and over is expected to increase from 5 to 14 %, and the working population (20–65 years of age) is expected to shrink from 61 to 50 % (Federal Statistical Office, 2009). These numbers don't look so positive for the pension scheme as the smaller working population will have to support a much larger elderly population. These demographic changes are already well under way, and the following paragraphs consider some of the main causes and challenges of this transition.

2.2 The Major Challenge and Its Causes

We identified two major demographic changes in Germany: its shrinking population and the aging society. We will now analyze the causes of these demographic processes and how they may affect the pension scheme.

2.2.1 German Pension Insurance

The German Pension Insurance has its roots in the social legislation of Otto von Bismarck, the first Chancellor of the German Reich(1871 to 1890). In 1889,

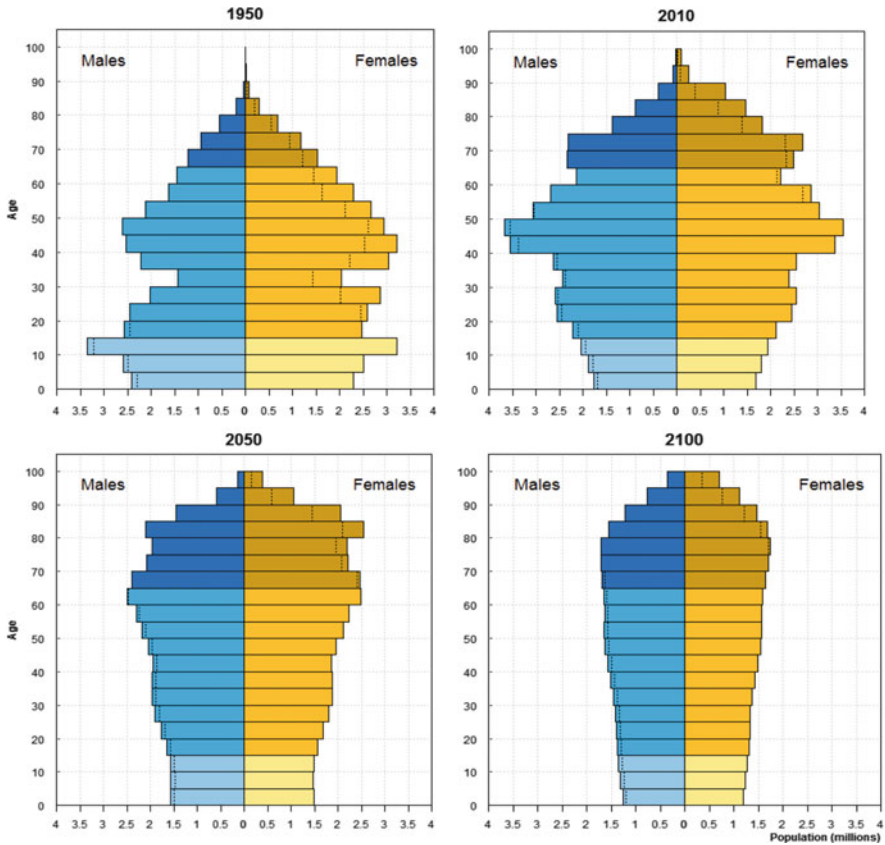


Fig. 2 Population pyramid age structure Germany (Source United Nations, 2014)

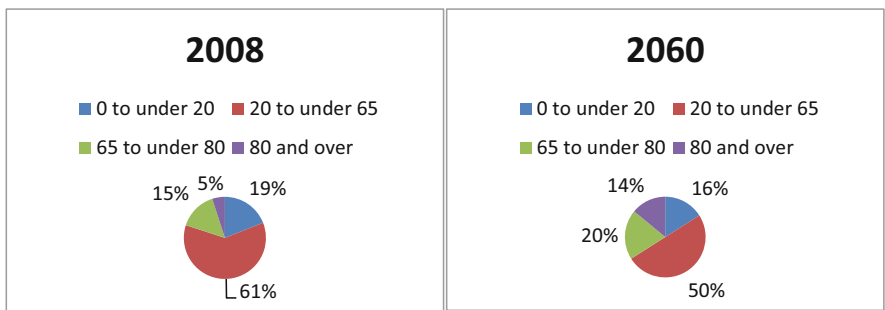


Fig. 3 Population by age groups (Source Own diagram based on figures provided by the Federal Statistics Office of Germany, 2009)

Bismarck proposed and passed a law on old-age security, which became the foundation for the current social security system in Germany. Today, the German pension scheme is based on a so called Pay-As-You-Go system. The working population takes care of the financial security of today’s pensioners, which is called the “generation contract.” This means that the contributions of today’s contributors go directly to today’s pensioners. These contributions have to be paid fifty/fifty by employers and employees. Since 1 January 2014, the rate of contribution is 18.9 % of the gross wage or gross salary (each 9.45 %). The assessment ceiling of the general pension insurance is 71,400 Euro per year in the old federal states and 60,000 Euro in the new federal states of Germany. The contribution assessment ceiling is adjusted each year in accordance with the economic development and fluctuations of salaries and wages. However, the general pension insurance is financed not only through these contributions: the budget is to be filled with annual grants (fiscal resources) from the federal budget (LeMO, 2014).

2.2.2 The Major Challenge

The major challenge that comes along with demographic changes in Germany is securing the future pensions. At this point, we refer to Birg (2003) who devised a mathematical explanation regarding the future pension scheme. As we mentioned earlier, the German pension scheme is based on the contributions and fiscal resources. Let X be the number of pensioners and P the average pension, then:

$$Expenditure = X * P \tag{1}$$

Furthermore, we assume that C is the number of contributors, w is the average wage/salary, r is the contribution rate and y is the tax factor (for example, if 30 % of the pensions are financed by tax, then the tax factor is equal to 1.3). Then:

$$Receipts = C * w * r * y \tag{2}$$

Next, assume that the receipts and the expenditure need to be equal in order to have a functioning pension scheme:

$$X * P = C * w * r * y \tag{3}$$

After solving the equation for r:

$$r = \frac{X}{C} * P * \frac{1}{y} * \frac{1}{w} \tag{4}$$

This shows that for a given pension, tax factor and average wage, the contribution rate is greater the higher level the quotient of pensioners and contributors.

The ongoing trends of the demographic changes will result in aging population in Germany. The number of pensioners will rise, whereas the number of contributors will decline. As Fig. 2 illustrates, the quotient of pensioners and contributors in 2008 was $(20\%/61\% =) 0.33$ and is likely to change in 2060 to $(34\%/50\% =) 0.68$, which is more than double. As a result the contribution rate also has to be doubled (if P , y and w are fixed) in order to fulfill the above equation, which would be $19.9\% \text{ (in 2008)} * 2 = 38.38\%$. Another option would be to reduce the pension by the factor of $\frac{1}{2} = 0.5$, which would be half of the amount in 2008 ($52\%/2 = 26\%$). These changes are not feasible immediately and, therefore, the biggest challenge for the German pension scheme is to ensure future pensions without drastically reducing the amount of pension or increasing the contribution rate (Birg, 2003; Federal Statistical Office, 2009).

2.2.3 Causes

The demographic change in Germany is a result of low birth rates, higher life expectancy and changing family structures, and, in this section, we will examine some of the factors, which influence these causes.

In economic terms, the demographic paradox explains low birth rates in industrialized countries that occur despite rising real income. The economic reason for having less children lies in the rise of child care cost and industrial consumer goods. This means that you can reach a higher utility if you spend the bigger part of your income on industrial goods and at the same time reduce your spendings on child care. This position assumes that given the fixed income, the demand for goods will grow when the price is reduced. This idea practically explains having children as a sort of investment into future social security for parents, which puts children on the same scale with consumer goods.

Another point of view explaining the demographic paradox interprets children not as real costs, but as opportunity costs, the latter being defined as a loss of income when a mother decides to have children instead of going to work. The theory states that those opportunity costs may increase over time, which makes having children more expensive in terms of foregone income. If this theory were true, people would only work for the income, and not for the utility of it. The maximization of income itself would be the ultimate goal. The question here, then, is why do people prefer to not save all of their money and buy consumer goods instead. Thus, this theory is not enough to explain the demographic paradox.

In order to examine possible causes of the aging population of Germany we will have a look at historical events which could explain these trends in demography (Birg, 2003).

2.2.4 The Introduction of the Modern Social Security

Bismarck introduced a law on old-age security in 1889. Since then, social structures have been constantly modernized. The connection with lower birth rates is reflected in the earlier ways of thinking about having children. Whereas before children were seen as some sort of social security (in terms of life risks, diseases, accidents and deaths), nowadays this responsibility is on the contributors. In that scenario children are no longer a means to secure future for parents (Birg, 2003).

2.2.5 Change in Values

One reason for low birth rates could lie in change of values. Some argue that capitalism instigated pervasive egoism and deterioration of the institutional marriage. The importance of family has diminished, and, today, German society may have a stronger regard for individualism. Even representatives of liberal policies argue that the decision against having children is an expression of individual freedom (Kröhnert & Klingholz, 2005).

2.2.6 The German Reunification

Declining birth rates in the new federal states after the reunification received attention across the world. Never before had a country changed its fertility behavior so rapidly in times of peace, while, in the BRD, birth rates were increasing steadily.

At the time of the German Democratic Republic, Eastern Germany was characterized by high fertility rates prompted by government-sponsored incentives for having children early. Many demographers believe that the decline in birth rate would have also occurred if the reunification had not taken place. German reunification strengthened that effect (Witte & Wagner, 1995).

Furthermore, the reunification unsettled young people with regard to their family development and opportunities in the labor market. The economic insecurity resulted in reduced desire for children. Since German reunification, the average age of having a first child has risen sharply. The demographic behavior of younger people in the new federal states has converged to the old states. This trend of later childbirth can be seen in many other industrial countries (Kraus, 2009).

2.2.7 Further Causes

In addition to the causes discussed above, there are a few more, which have contributed to the current demographic situation. Education level of women relates strongly to fertility rates, especially in Western Germany. In general, women who leave school at an earlier age tend to have more children. According to Grunheid,

women who do not receive their graduate certificate have an average of over three children. On the contrary, 30.9 % of women with a higher education degree don't have any children. The proportion of women with a higher education has grown in recent years, and it has been accompanied by declining fertility rates overall. Oral contraceptives, which became popular in the 1960s, are another likely reason for the country's low fertility rates. However, this is a very controversial theory. The slump of the birth rate at the beginning of the 1960s in Germany is primarily attributed to leveling-out of the baby boomer generation of 1955 to 1965.

3 Economic and Social Measures against the Demographic Change

3.1 Pension Reforms

Due to the aging society and its huge impact on the pension scheme, demographic change has turned into a political debate, and the government has introduced several pension reforms over the last 20 years. The main goal of those reforms is to manage demographic changes through legislation in order to ensure funding and retirement benefits for pensioners.

The first pension reform responding to the demographic change was introduced in 1992. This was the first time that the government publicly acknowledged that the country needed to prepare for its aging society. Regarding the rise of pensions, payments into retirement benefits changed from a gross wage to a net wage in order to adjust to the slowly rising net wages and increasing taxes and social security contributions. Furthermore, the pension age was adjusted for different retirement payments to the age of 65. In addition, being a caregiver for a child born before 1992 became a condition for increase on their pensions (Leisering, 1992).

Since 2001, German pension reforms have included a gradual reduction of the statutory payout rate and the complementary introduction of a new private, government-subsidized pension-saving products. Since then, the development of the current pension rates has correlated with average gross wages. Certain retirement provision contracts have been partially subsidized through support payments and partially through tax deductions ("Riester contracts"). At the same time a firm's pension scheme became more attractive by a certain deliberation process: the closing of direct insurance contracts were enabled and some types of old-age pensions were included into the Riester contracts. Furthermore, some new legal regulations were introduced. Working mothers receive more earning points (€28 gross per month) if their child is 3 to 10 years old and their income is below average (Marschallek, 2004).

The 2004 pension fund sustainability law controls the quantitative development of the amount of pensioners in relation to the amount of people earning money at work. Since the introduction of deferred taxation in the same year, the contributions

to the statutory pension insurance are exempted from the income tax until 2025, whereas the statutory pension is a subject to the income tax until 2040.

Another recent pension reform was introduced in 2007. The “Insurance—Retirement Age Adjustment Act” extends the retirement age from 65 to 67. Also, the old-age pension for those insured long-term, which can still be obtained deduction-free, was introduced (Berkel & Borsch-Supan, 2003).

3.2 Pension Packet 2014

On the 1st of July 2014, a new pension packet was introduced in Germany. Rising social inequalities have been accompanying demographic changes, and the 2014 pension packet includes several measures designed to close this gap. People who were born before 1950 are the primary beneficiaries. This packet contains four main measures (Bundesministerium für Arbeit und Soziales, 2014):

Those who paid contributions to Statutory Pension Insurance for 45 years can retire at the age of 63 after July 2014. The pension age will be extended to 65. For those insured and born before January 1953, the retirement age is lowered with each year by 2 months. Therefore, insured people who were born before January 1964 will be able to retire with a full pension if they reach 65 years of age (Bundesministerium für Arbeit und Soziales, 2014).

Mothers who had their children before 1992 receive more money per child each year. Pensions for those mothers improve their social security. Specifically this means that mothers benefiting from this statutory provisions receive €338 a year per child (Bundesministerium für Arbeit und Soziales, 2014).

The reduced earnings capacity pension in Germany decreased over the last years. While the average pension payment amounted €676 in 2001, it fell to €607 in 2012. For that reason the non-contributory supplementary period of reduced earnings capacity pension will be increased from the age of 60 to 62 and the formula for calculating will be improved (Bundesministerium für Arbeit und Soziales, 2014).

Another important issue to address regarding demographic changes is the adjustment of seniors medical care costs. Demand for preventative and medical care is growing due to the fact that the baby boomers are reaching senior age. Therefore, there is a greater need for more services. To solve this problem, the rehabilitation and medicare budget will be adjusted according to the needs of the population (Bundesministerium für Arbeit und Soziales, 2014).

3.3 Corporate Management

According to surveys conducted by the Hamburg Chamber of Commerce, many human resources department managers see demographic changes as their main

challenge. Numerous companies have come together to establish the Demographic Network in 2014—a non-profit consortium of 400 companies representing about two million employees. The Demographic Network actively controls demographic changes and researches how to adapt to an older working population. As a result companies are able to compare their situation with other companies and learn how to cope with the demographic problem.

Many companies now also include demographic analysis in corporate planning. They use differentiated analysis of age structures which can identify specific areas of risk within their workforce (Bundesministerium für Arbeit und Soziales, 2014):

- Aging groups of population and operating units
- Difficulties in finding staff, especially in attracting young professionals
- Massive loss of knowhow over a short time because of retirement rates
- No transfer of knowhow between younger and older employees
- Declining efficiency of older staff

Companies are developing business demography projects supported by European Social Funds, the Federal Ministry of Labor and Social Affairs. The Ministry trains advisors in demographic change to provide assistance to companies with the implementation of specialized demographic-orientated human resources projects. The aging society has a huge impact on corporate management and many companies are already on their way to develop strategies to deal with changes (Rump, 2013).

4 New Solutions and Their Feasibility

4.1 *Attracting and Retaining Skilled Immigrants*

One solution for the declining population and aging of the society in Germany may be to attract skilled immigrants to the country. This idea has been widely mentioned in popular press. To quote Suzanne Daley and Nicholas Kulish, “With high unemployment rates across most of Southern and Eastern Europe, Germany is in a good position to increase its labor pool by plucking the best and the brightest from its neighbors” (The New York Times, 2013). During 2012, Germany saw an increase in population of 368,945 due to immigration (Federal Statistics Office, 2013). Most of the immigrants come from Poland, Romania and other eastern and southern European countries (Federal Statistics Office, 2013) in a hope to find a job. Their home countries are struggling with unemployment and have little hope for change in the near future. The current wave of immigrants brings mainly well-qualified and trained people to Germany including engineers, academics and skilled workers (Deutsche Welle, 2013).

Cumbersome legal frameworks and unclear paths to citizenship have erased the success of past initiatives to attract and retain highly skilled immigrants, who

instead chose to move to other European countries with more favorable treatment. Strategically favorable immigration policies are a key when the government seeks to attract skilled immigrants before other European and non-European countries. Retention and integration of foreign workers is also important and requires a significant amount of attention from the policy makers. If Germany were to develop a better integration program, it would need to foster a more welcoming atmosphere. Qualifications of immigrants should be recognized, and they must be able to live in Germany with their families. Legal duties and documentation procedures should be simplified. Moreover, immigrants today learn German through integration. However, as many are looking to work as engineers, scientists, doctors or nurses, the new generation of skilled immigrants may require specialized language classes.

The challenges of demographics in Germany could be alleviated through attraction and integration of skilled immigrants for a short-term and long-term. Scandinavian countries, for example, have used immigration to alleviate some of their demographic challenges. Of course, this kind of solution will bring some other challenges as it leads to the continuous replacement of ethnic Germans with foreigners. Therefore, sustainable and politically acceptable measures are required.

4.2 Appropriate Family Support Policy

In order to tackle this problem and to find appropriate solutions, policy makers need to focus on improving Germany's fertility rates. During the 1970s, Germany had higher fertility rates and larger families. However, during the same period, lifestyles began to change due to the facts we have mentioned in Sect. 2. It also became more difficult to sustain larger families due to increasing autonomy of women and marriage rates started to fall. These circumstance lead to a decline in the fertility rate to about 1.4 children per woman, far below the rate of 2.1 children that is necessary for a stable population (Federal Statistics Office, 2013).

The challenge now lies in developing a balanced policy that will ensure recognition of the values of modern western culture such as gender equality, women's independence and minority rights, while, at the same time, encouraging larger, healthier and happier families in order to improve declining fertility rate. Germany has achieved very little from investing money in a system of family benefits and tax breaks that includes allowances for children and stay-at-home mothers, and tax exemptions for married couples.

Instead, the country should focus on developing a comprehensive family support policy, compiling its many initiatives into a unified action plan. This policy should have basic characteristics such as (France Diplomatie, 2013):

- Payment of family benefits such as housing benefit, family allowance, early childhood benefit
- Introduction of specific forms of leave such as maternity leave and paternity leave

- Tax allowances depending on number of people in a family or specific benefits such as large family card, retirement benefits
- Child care facilities and after school programs available from a very young age

As a result of family support policies and extension of compulsory education, 85 % of women in France are occupied at work (France Diplomatie, 2013). Furthermore, the average age at which French women have their first child has increased and is now 30.1 years. However, this postponement of motherhood has not had any negative impact on fertility rates (France Diplomatie, 2013). Thus, as a consequence of family support policies, there will be more skilled female workers in the system, which will help the country to deal with shortage of skilled workforce. High rates of female employment also help to promote gender equality in the workplace, which has more positive implications. In the long run, increased support to families will increase women's fertility and improve their chance to secure a job.

There is another long-run implication of these family support policies. They provide many financial and non-financial provisions and incentives for people to have larger families. This dimension of the policy is critical because it will help Germany to encourage stronger families, which is a key element for the country's demographic situation. In fact, family institution is one of the most important things, which was lost during the 1970s. Since family and married life are positively correlated with fertility rates, that will stimulate a greater number of births. Similar policies helped France to increase its population by 300,000 people (+0.47 %) since last year by retaining its fertility rate at 2.1 (France Diplomatie, 2013). It will put France in a favorable position among the European countries from demographic perspectives. The policy will help Germany to be prepared to tackle the existing demographic crisis.

4.3 Revision in the Retirement Age

Angela Merkel's governing coalition decided to reduce retirement age from 65 to 63 years for those who have been paying into the pension system for at least 45 years (Deutsche Welle, 2014). This decision could be justified because it will help Germany to reduce immigration rates among young people by reducing unemployment in these groups. Hence, it may provide a sustainable and long-term solution for the existing demographic challenges in the country. The government sets aside over €4 billion annually to cover the initial cost (The Local, 2014).

On the other hand, this approach may lead to loss of a big part of skilled workforce within next few years because the number of people in the workforce aged 55–64 had risen to 61.5 % in 2012 from 38.9 % in 2002 (Federal Statistical Office, 2009). Many scholars argue that retirement age in Germany should be raised to 67 years instead of 65 or 63 in order to deal with the current demographic challenges, especially in the short-term. Another reason behind this approach is the increase in retirement age by roughly 2.5 years per decade in

EU countries for the last 150 years. Retirement age has been held almost constant at 65, since the late 1940s in many countries in northern Europe. But during that time, life expectancy had gone up by 10–12 years (Deutsche Welle, 2014). So instead of paying pensions to these skilled people, authorities should use their energies in the best interests of the nation. Other European countries such as Greece and Portugal have already adjusted their retirement age to meet the demographic challenges.

4.4 Reducing the Number of Pensions

Another problem is the number of pensions per person. In Germany the reversibility (or survivor's pension), or delaying retirement time is up to the family and is based on many criteria. To reduce public deficit, a solution might be to give only one pension per person. So if only one person in a married couple is working, pension will transfer to the spouse if a person dies even if the spouse doesn't obtain a job. However, if they both work, the pension cannot be transferred to the surviving spouse. In recent years, there are funds provided for workers which they put their savings and will be "untouchable" until the pension.

These funds allow workers to have a more secure future due to constant changes in laws. The alternative would be to organize a system based on the model of the pension fund, where all the workers pay for their own pensions. It should then switch from possibility to obligation to make these funds. This solution, however, remains only theoretical because a transition from the current pension fund model would require a generation of workers pay both for themselves and for the generation of their parents.

4.5 Educating the Masses

Another sustainable long-term solution might be to help people to rethink their life styles and priorities in favor of healthier demographic trends through awareness and education. The objectives of such policy might be to create awareness about the negative trends in the country's demography and how these negative trends can be converted into favorable ones. Other objectives might include raising fertility rates through improving the value of family life, building happier larger families. For integration of immigrants, encouragement may include the promotion of diversity and tolerance for different people and cultures. In the same way, improvement of old age work may include flexible working hours, better work facilities etc.

This type of awareness and education campaign could be implemented using diverse of channels such as educational institutions, mass media, social media, community centers and religious centers where young people and families are concentrated. In this educational campaign, families and mothers are important because they have a significant influence on the personality and life style of an

individual, they might help to promote the desired values. In the same way, educational institutions such as schools and universities can influence young people's understanding of the rationality of these incentives. The other educational institutions such as language and cultural programs for immigrants will help to develop German lifestyle among the immigrants, which will facilitate their integration. Moreover, mass media and social media could be utilized to increase coverage of these ideas. Mass media could also help to educate adults to adopt healthier lifestyle through television shows, dramas, films etc. Finally, community centers and religious institutions will help to influence families and older people to act as responsible citizens by working after age of 65 years and by educating their children to save the country from demographic disaster. These types of policies for educating the public could only be effective in the long-run. However, they are important because they could have long lasting effects on the German society. In fact, they would be a reversal of the paradigms, which were promulgated during the late twentieth century.

5 Conclusion

The demographic paradigm shift has been under way for many years, and Germany has already responded in many ways. Still, the country needs to take more corrective measures to deal with demographic challenges both in the short and long term. Immigration is one of the best solutions for the existing challenges at least in the short term. But Germany does not have the most suitable conditions for integrating immigrants. So measures will have to be taken to better accommodate immigrants. Increase in fertility rates may be a long term solution. Therefore, Germany needs to develop and promote family support policies to boost fertility rates in order to be able to deal with upcoming demographic challenges. Also, Germany may have to consider the option of establishing the retirement age at 67 years to overcome its skilled labor shortage in the short term. Furthermore, Germany may also reduce the number of pensions to one per individual in order to decrease the capital expenditures on the pensions. Finally, Germany needs to raise awareness and devise a comprehensive education plan to promote and accelerate corrective initiatives in unified direction.

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