WDA Forum

University of St.Gallen

Project Papers 2014

on Demographic Challenges

Megatrend „Global Demographic Change“ Tackling Business and Society Challenges in 2030 and beyond

Masterclass Seminar by Dr. med. Hans Groth, MBA
at the University of St. Gallen, Switzerland
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I. Introduction and Rationale

Since 2009 I have had the privilege to teach a master class at the University of St. Gallen entitled "*Megatrend Global Demographic Change: Tackling Business and Society Challenges in 2030 and beyond*."

The concept of this class is about case studies, discussion rounds and interactive outside-the-box conversations around global population trends in the 21st century and their impact on business & society.

The case studies generated each year by the students focus upon four categories:

- The unique population dynamics of Switzerland
- Country & regional case studies all across the globe
- Geopolitics & financial markets
- Opportunities arising from demographic change for business & society

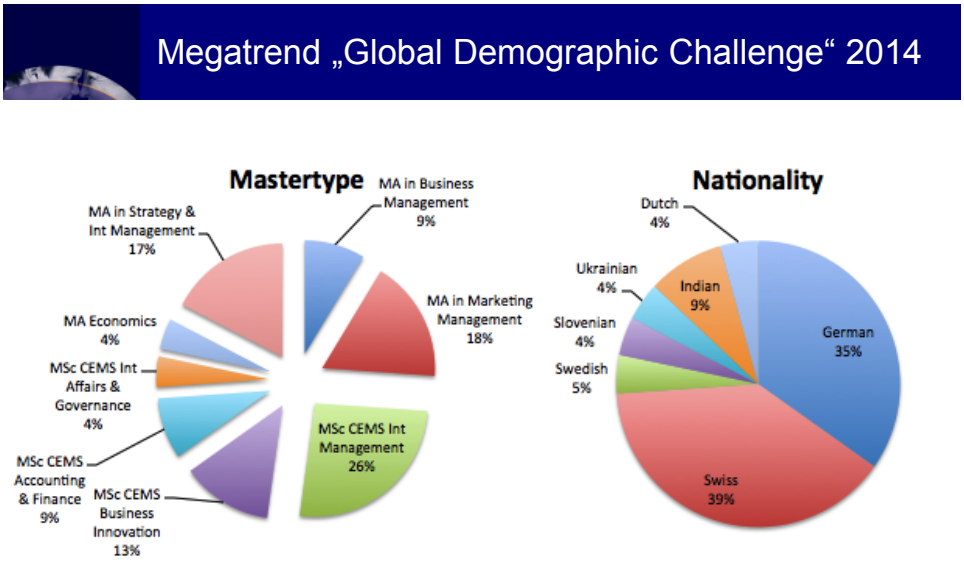
What is my motivation to offer such a class each year with both a changing content and a very interactive style?

The coming decades will expose us to demographic dynamics that history has not equipped us to manage. This forces us to focus on the future, a period of time which we are not generally accustomed to reflect upon. This is why the megatrend of demographic change is so intimidating and makes it all the more crucial to be permanently prepared for innovation and creativity as well as openess for change.

However, this will only be achievable if appropriate education/training and thus knowledge/skills is provided for those who have to manage and lead this challenge.

My response as a member of the 60+ generation is to provide a unique platform for academic work and exchange for HSG students who want to broaden their scope related to demography and its impact on business, governance and society - as managers as well as responsible members in the communities they are living.

In this year‘s autumn semester 23 students from 9 different nations (Switzerland, India, Sweden, Slowenia, Ukraine , India, Netherlands, Austria, Germany) and from 8 different HSG Master Programs (SIM, MIA, MAccFin, MSc CEMS Int Management, MSc CEMS Business Innovation, MA Economics, MSc CEMS Int Affairs & Governance, MA in Business Management) successfully bid for my class.



It is obvious that this group represented inspiring cultural and academic diversity.

The students aligned themselves in 8 project groups and engaged in building deeper knowledge on one of the following themes:

- *On what underlying principles does intergenerational solidarity rest?*
- *How is the entry of young people into the working world influenced by demographic trends such as population ageing?*
- *Shrinking societies: Does this phenomenon inevitably lead to a loss of national economic power and prosperity?*
- *Impact of migration on Switzerland and its demographic ageing*
- *Sub-Saharan Africa (SSA) – Does an indicator help understanding this region?*
- *Ageing in China*
- *How does the demographic future of Hong Kong look like?*
- *How will demography impact/shape the conflict between Israel and Palestine?*

In this book you will find the corresponding papers which were elaborated by these 8 working groups in October – November 2014. Prior to submission all papers have been presented and vividly discussed in front of the entire class.

The key learnings from these case studies can be summarized as follows:

- *Intergenerational solidarity*
  Intergenerational solidarity is a question of level: the micro level that involves families and close friends, the mezzo level consisting of communities, NGOs, etc. and the macro level of governmental/political policies as well as public transfers.

- *Entry of young people into the working world*
  Youth unemployment is 3 times higher than the general unemployment rate. 25% of the global workforce is provided by India. Population ageing has contrasting effects on skilled and unskilled workforce members. For example, India's huge internal migration is driven by culture compared to an employment-driven immigration in Switzerland.

- *Shrinking societies: Does this inevitably lead to a loss of economic power and prosperity?*
  Shrinking societies negatively impact a nation's economic power – and subsequently put pressure to maintain competitiveness and productivity. There are three measures for mitigation: 1. increasing education and continuous training; 2. work proactively with immigration; 3. efficient management of welfare, health and pension expenditures.

- *Demographic ageing in Switzerland: Could the country sustain itself without a foreign workforce?*
  Without migration Switzerland will inevitably face numerous unfavourable consequences that are hard to quantify because of multiple and unpredictable interdependencies. Thus, for a prosperous country like Switzerland with an advanced ageing society, it will be crucial to come up with a well-balanced and even better communicated immigration policy.

- *Sub-Saharan Africa: How to design a composite indicator based on demography?*
  It is possible to compute a robust composite risk indicator for Sub-Saharan Africa based on demography with focus on fertility rates and its influencing factors.

- *Population ageing in China: How will it influence China's economic power in future?*
  China will become a developed country by 2030, but its economic growth will definitely slow down. The one child policy worked for pulling 800 million people out of poverty but this policy is about to create unprecedented social changes mainly on the family level. China's population is forecasted to stagnate or even shrink by 2050 at the latest. Therefore its workforce will be pressured to support growing cohorts of elderlies.

- *How does the demographic future of Hong Kong look from a perspective of fertility?* The family institutions need to be reformed in order to allow women to both have children (stabilizing fertility rate) and make use of their untapped working abilities. The overall goal on the macro level is to secure a sufficient level of economic output in societies with low fertility. Benefits and acceptance of institutional care must be spread and an equality-oriented culture must be promoted.

- The increase of Arabs across the Palestinian and Israeli territories contributes to increased tensions in this region. The younger the age, the higher the share of Arabs in Israeli territories - and this has positive and negative implications. It is uncertain whether peace projects and cultural exchange programs will have practical impact on long-term attitudes and political reconciliation. Demography *How will demography impact the conflict between Israel and Palestine?* therefore is an underestimated driver in the dynamics in this region.

I am convinced that the 2014 papers of my students will be an inspiring source on how our "Planet Earth" might develop. One might also agree with me that these students have developed a solid understanding about the business and civil society environments in which they are most likely to live in between 2030 and 2050.

On behalf of all who contributed to the content of this book, I am happy to fascilitate any further discussions with any potential reader.

Dr. med. Hans Groth, MBA
Chairman of the World Demographic & Ageing Forum (WDA Forum)
Guest Lecturer on "Demography and its interdependencies to wealth, health and social sustainability", University of St. Gallen

St. Gallen, January 2014

II. Papers of the 2014 Masterclass

Universität St.Gallen

Megatrend 'Global Demographic Change' – Tackling Business and Society Challenges in 2030 and beyond

Switzerland without migration

An analysis of Switzerland's hypothetical population and GDP development without migration and the consequences of such a policy based on the PESTEL framework

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Dario Lardi
Lars Schnidrig
Yves Terrier

Abstract

Since World War II, Switzerland has experienced relatively high rates of immigration. Today, 23% of the people of Switzerland are foreign nationals. In a hypothetical situation where all foreigners were expelled from the country and nobody was allowed to migrate in or out, the demographics of Switzerland would change drastically. The population of Switzerland would shrink from 8 million to 6 million people and the number of Swiss citizens will start to decrease due to the low fertility rate of Swiss people. Moreover, the share of people over 65 years will increase, so that only 53% of the population will be in working age by 2060. Consequently, the labour supply would decrease over the next 45 years. This would affect political, economical, social, technological, environmental, and legal aspects, as outlined in the PESTEL framework.

The demographic change caused by the lack of foreigners will slow down the economic growth in Switzerland. It will take at least 25 years until the GDP reaches the same level as today and almost every industry will be affected. Large parts of the economy will be understaffed: Hotels will be empty, the construction industry will collapse, and factories will have to close. The retirement age will probably have to be raised. Robotics might compensate for the lack of qualified employees in some areas, but the rate of innovation will drop. The population decline will furthermore lead to a reduction of carbon emissions in Switzerland, but on a global level it will not have any impact. Finally, a legal framework, which does not allow any migration, will contradict the Human Rights and as a consequence all bilateral agreements with the European Union will have to be renegotiated.

In the past fifty years, the growth of the population and the economy has been driven by immigration. A no-migration policy would have unpredictable consequences whose magnitudes are hard to quantify due to variety of reasons: First of all, it is impossible to foresee all possible consequences, since there is not any comparable case of a prosperous country closing its borders. Secondly, there will be interdependencies between the consequences reinforcing their impact. Finally, the fate of Switzerland will depend to a large part on the reaction of politics in Switzerland and abroad. Whatever the impact, it will be profound and unpredictable.

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1 Introduction

Max Frisch (1965) states in his introduction to Alexander J. Seiler's «Siamo Italiani» that workers had been called and people came before adding that they don't consume the prosperity, in contrary, they are essential for it (p. 7).

Switzerland has had a history of immigration surplus for decades. Immigrants helped the Swiss economy prosper in various sectors. Nowadays, foreign workers represent over 30% of the work force in the industries of hotel and restaurant, construction and manufacturing (Federal Statistical Office, 2014e, s. Appendix).

This paper is concerned with the hypothetical Swiss population and the corresponding GDP development if Switzerland was to prohibit any migration. The consequences of such a policy are then analysed based on the PESTEL framework.

The first part of the paper examines the Swiss demography. To provide a holistic overview, Switzerland's past, present and prospective future will be researched.

Subsequently, the second part focuses on the hypothetical case of Switzerland without migration. Here, the authors distinguished between two scenarios: Scenario 1 is called "No Migration" allowing no one to enter/exit Switzerland from now on, whereas scenario 2 – named "SWISSerland" – is even more strict, expelling all foreigners immediately. Afterwards, the impacts of these two scenarios on Switzerland's overall GDP will be closely examined.

In chapter 4, the PESTEL (Political, Economic, Social, Technological, Environmental, and Legal) framework will be used to analyse what kind of consequences Switzerland would face if these scenarios were applied in real life.

As a final note, a summary and the limitations of this paper will be given.

2 Demography in Switzerland

This chapter is specifically designed to give a general overview of Switzerland's demography. It will start with the historical evolution of the Swiss population, before moving on to its current state and then ending with prospective scenarios for its future development.

2.1 Historical View

The first census of Switzerland took place in December 1860 and counted a population of 2.5 million (Calot, 1998, p.17). Until the end of 2013, the Swiss population grew at an average growth rate of 0.8% per year to a total of 8.139 million people (s. Figure 1, p. 2). However, the growth rate has been varying since the mid-19th century. During the periods 1890-1910 and 1945-1970 the population was growing at an annual rate of about 1.2%. During the periods with modest growth (1860-1880 and between the two World Wars: 1920-1945) the

population grew at a slower rate of only 0.5% per year. Negative population growth has remained the exception in Switzerland and has been caused by a variety of reasons – for example, in 1918 due to an epidemic flu, or from 1975 to 1977 because of a high emigration surplus. In contrast, between the years 1961 and 1963 Switzerland experienced exceptionally high growth rates due to a high immigration surplus (Calot, 1998, p.17).

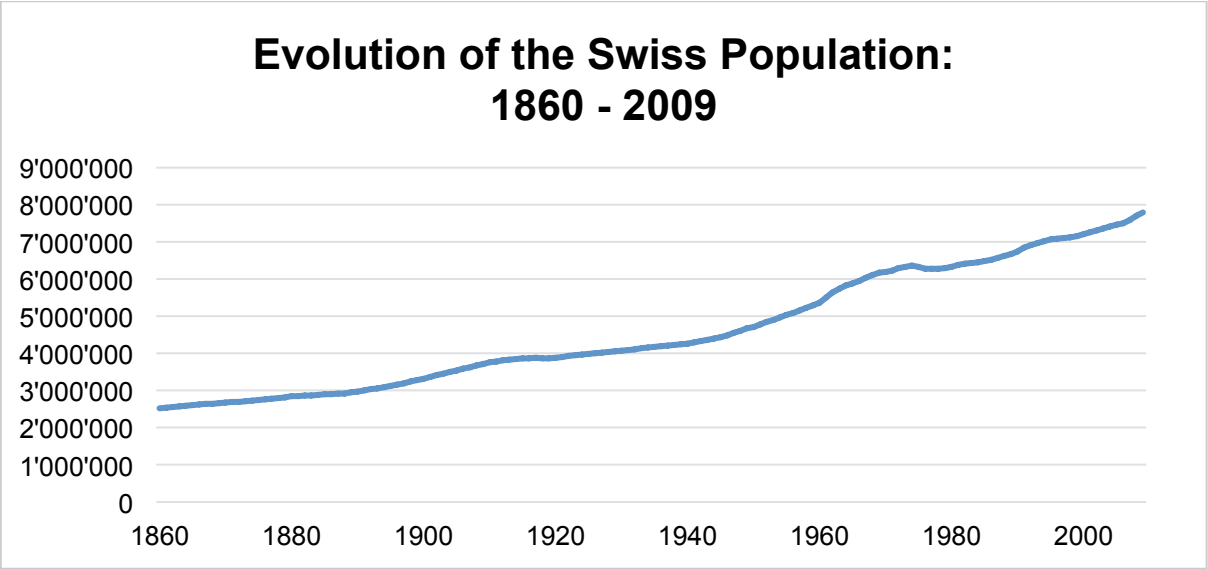

FIGURE 1: EVOLUTION OF THE SWISS POPULATION: 1860 – 2009; OWN GRAPH, BASED ON DATA OF THE FEDERAL STATISTICAL OFFICE: HTTP://WWW.BFS.ADMIN.CH/BFS/PORTAL/DE/INDEX/THEMEN/01/02/BLANK/DATA/01.HTML

Swiss citizenship and foreigners

The natural population change is defined as the balance of births and deaths. On the contrary, the irregular annual population growth is mostly caused by net migration (Calot, 1998, p.17). The net migration itself is determined by the difference between immigrants and emigrants and often referred to as the balance of migration (Calot, 1998, p. 218). Another term in this context is the relative net migration, which is calculated when dividing the net migration by the half-sum of the total population on 1 January and 31 December (Calot, 1998, p. 218). During the period from 1860 to 1996, the relative net migration was on average 1.2 per thousand (Calot, 1998, p. 17). However, most years between 1872 and 1930 showed negative net migration, except for the economic boom period from 1888 to 1910 (Calot, 1998, p. 17 & 23). These numbers show that Switzerland had been a country of emigration in absolute terms until the end of the Second World War. Since then, Switzerland's net migration has been consistently positive, except for four years (1970, 1975-

1977). The net migration temporarily peaked in the years 1961-1963 and 1990-1991. (Calot, 1998, p. 17).

The progress over those periods had not only caused an increase in population but also showed a change in the population's age structure. The youth as well as the old-age dependency ratio have shifted dramatically over time and still are (Federal Statistical Office, 2014a). The strongly increased old-age dependency ratio helps to illustrate the ageing population of Switzerland.

2.2 Current Situation

The population of Switzerland amounted to 8'139'600 at the end of 2013 and its growth rate added up to 1.3% within the last year (Federal Statistical Office, 2014b, p.1). The numbers for immigrants as well as emigrants have increased. In 2013, 193'000 people immigrated to Switzerland, 167'000 of which were foreigners, whereas only 26'100 were Swiss. On the other hand, 106'200 people emigrated from Switzerland resulting in a positive net migration surplus of 87'100 for the year 2013. The net migration of Swiss citizens was negative (-2'400) but compensated by foreigners with a surplus of 89'500.

Currently, the ratio of Swiss people to foreigners in the population within Switzerland is 6'202'200 to 1'937'400 in absolute numbers and 76.7% to 23.3% in relative terms (Federal Statistical Office, 2014b, p. 2; s. Figure 2 below).

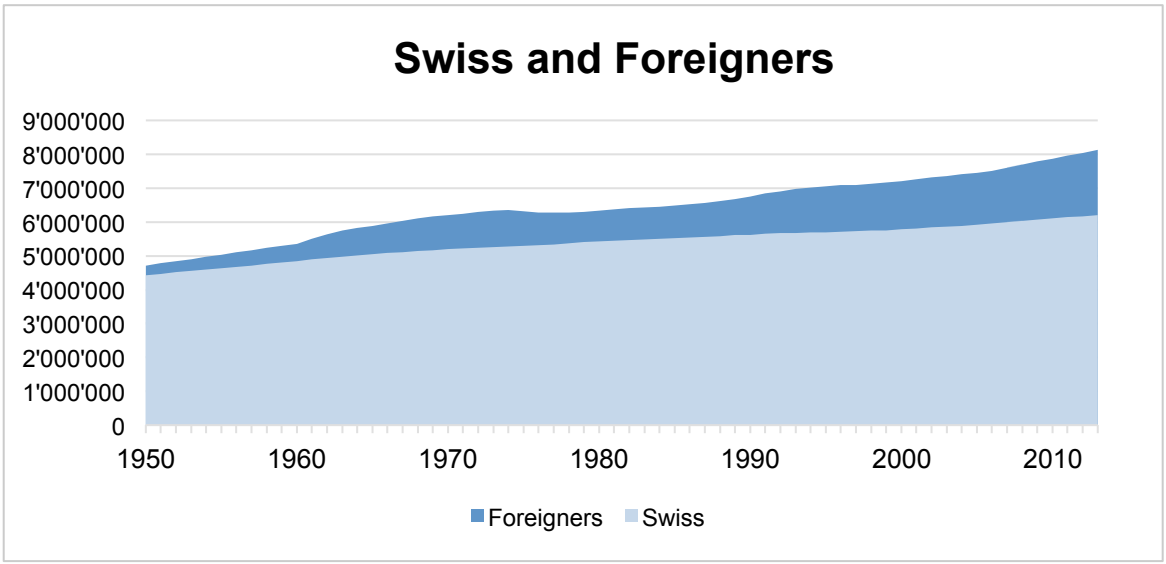

FIGURE 2: SWITZERLAND'S POPULATION – NUMBER OF SWISS AND FOREIGNERS LIVING IN SWITZERLAND; OWN GRAPH, BASED ON DATA OF THE FSO, 2014B.

As mentioned above, Switzerland has an ageing population (Federal Statistical Office,

2014a). The number of people over 65 years living in Switzerland amounted to 1'432'000 by the end of 2013, which accounts for 17.6% of its population.

2.3 Forecast

From today's perspective, it is unclear how fertility rates, migration, and age structure will develop in the future. To account for this uncertainty, the Swiss Federal Statistical Office distinguishes three scenarios: "low", "middle" and "high" (Federal Statistical Office, 2010, pp. 21), which will be explained consecutively in more detail.

2.3.1 The middle scenario

According to the middle scenario, Switzerland's resident population will grow continuously to 8'992'000 people in 2055, which represents a relative population growth of 10.5% compared to today (Federal Statistical Office, 2010, p. 21). The annual growth rate will however continuously shrink over time due to a death surplus. After 2055, the size of the population will plateau at around 9 million.

2.3.2 The high scenario

In this case, the Swiss population will grow very intensively. The forecast of the high scenario assumes that 11'315'000 people will be living in Switzerland by 2055 (Federal Statistical Office, 2010, p. 23). This is a relative growth of 39% compared to the year 2014. The high scenario projects a birth surplus until 2055 and a death surplus ever after (Federal Statistical Office, 2010, p. 23).

2.3.3 The low scenario

The low scenario, also developed in 2010, has already been exceeded by the development of the Swiss population over the past four years. In this scenario, the population would reach its peak in 2020 with a population of 7'996'000 people (Federal Statistical Office, 2010, p. 24). From that point onwards, the population would shrink to 6'757'000 in 2060. Compared to the numbers of 2010, the population would therefore shrink by 14%, which is an average decline of 0.3% p.a. (Federal Statistical Office, 2010, pp. 24).

3 Switzerland without migration

This part draws a picture of what Switzerland would look like in the future, if there were no more migration from now on. When speaking of migration in this paper, it is thought to

consist of immigration as well as emigration (s. also 2.1 Historical View, p. 2). Concluding from this, the following chapter surveys Switzerland with closed borders, meaning no one enters and no one exits the country. Without any migration, the growth or decline of Switzerland's population would then be caused only by the birth or death surplus respectively.

3.1 Demographics

When applying Switzerland's hypothetical policy of no migration, we distinguished two scenarios. The first scenario – called "No Migration" – assumes that Switzerland closes its borders immediately and does not allow anybody to enter or exit the country in the future. Hence, Switzerland's prospective population would solely depend on the people that currently reside in Switzerland. The second scenario – called "SWISSerland" – hypothesises that all foreigners are expelled immediately and the borders will be closed after that. Therefore, the future population will then solely depend on Swiss people currently living in Switzerland.

To calculate the future population of Switzerland, we then relied on data from the "Federal Statistical Office" (FSO) as of January 2014. The FSO developed as mentioned before three different scenarios for the future demographic development: a "low", a "middle", and a "high" scenario (Federal Statistical Office, 2010, pp. 21). However, for all extrapolations the FSO uses the "middle" scenario as it seems to be considered the most likely.

Therefore, we subsequently used the birth/death surplus projected by the "middle" scenario to develop and calculate a picture of Switzerland's prospective population development until 2060 in the case of "No Migration". On the contrary, for the scenario "SWISSerland", we accounted for the lower fertility rate of Swiss women compared to women from foreign countries (over 25%) as well as for the fact that foreigners are not yet well represented in the oldest age group (65+) in Switzerland and will therefore not influence the death rate as much in the coming years (Groth, 2014, p. 36). Consequently, we lowered the projected birth/death surplus for the forecast period by 25%, knowing that this is a strongly simplified assumption to make but approximating the overall effect.

In both cases the "middle" scenario projects a birth surplus until 2032 followed by a death surplus for the rest of the forecast period. Since forecast data are only available for the end of each decade, i.e. the years 2020, 2030, 2040, 2050, and 2060, as well as for simplicity reasons, this paper applied a steady and constant growth/decline rate in between these data cornerstones.

In conclusion, in the scenario of "No Migration", the Swiss population will – based on our calculations – grow until 2032 where it'll peak at 8.36 million people. Thereafter, the Swiss people will shrink at an increasing rate and reach 8.00 million by 2060. This is about 140'000

people less than today (s. Figure 3, p. 6). According to our calculations for the scenario "SWISSerland", the Swiss population will also peak in 2032 at about 6.33 million people and then decrease to just below 6.00 million in 2060, which represents a drastic decline of 26.5% from today's population in Switzerland of 8.14m people (s. Figure 3, p. 6).

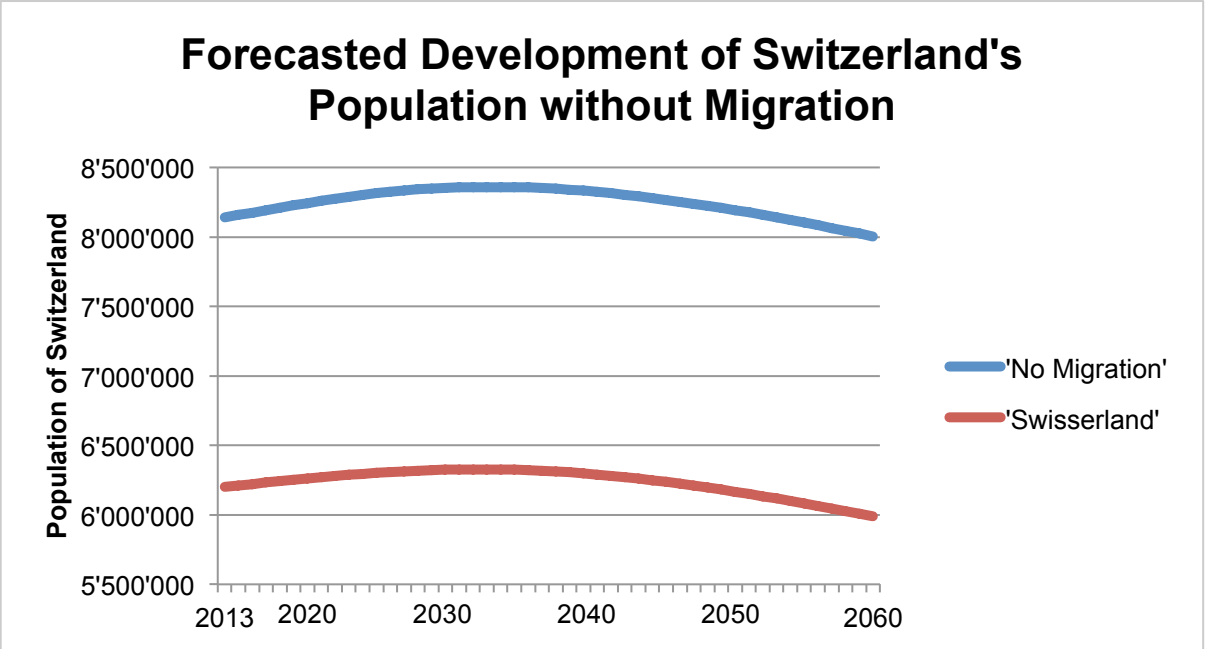

FIGURE 3: FORECASTED DEVELOPMENT OF SWITZERLAND'S POPULATION WITHOUT MIGRATION FOR SCENARIOS "NO MIGRATION" AND "SWISSERLAND". SOURCE: OWN CALCULATIONS, COMPARE FSO, 2014

3.2 Economy

Demographics have an impact on the economy, in particular the GDP. If the Swiss population is shrinking as shown above, how will it affect the national economy? To answer this question, let us have a closer look at the factors, which influence the GDP.

Macroeconomic Growth Theory lists three drivers of GDP growth: technological progress, capital, and labour (Gartner, 2009, p.245). As a rule of thumb, the GDP growth is equal to the sum of technological progress, two thirds of the growth rate of labour, and one third of capital growth (UBS, 2006, p.17). Consequently, if labour is shrinking by 1% per year, it will reduce the GDP by 0.67% (two thirds of 1%), assuming ceteris paribus. However, technological progress and capital accumulation can offset the negative effect of a shrinking labour supply.

GDP Growth
= Growth of Technological Progress + 2/3 Growth of Labour + 1/3 Growth of Capital

The above-mentioned macroeconomic model describes the effect of labour on economic growth. However, labour supply does not necessarily change proportionally to the population.

In the case of Switzerland without migration, we are looking at an ageing, shrinking population.
In fact, labour supply can be calculated as follows:

Labour Supply
*= Population * Share of Population in Working Age * Labour Force Participation Rate*

The actual labour supplied depends firstly on the population size, secondly on the share of the population, which is in the "working age" (the population between 20 and 64), and finally the labour force participation rate, because not everybody who could work will actually offer their labour in the job market due to a variety of reasons (compare SECO, 2001, p. 3).

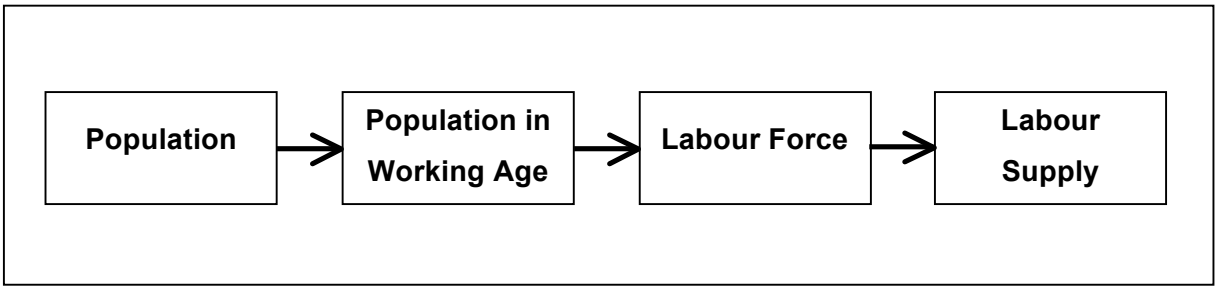

FIGURE 4: LABOUR SUPPLY DECOMPOSITION. SOURCE: SECO, 2001, P. 3

To calculate the change in GDP, we assume for the feasibility of our calculations that the labour force participation rate remains constant, as well as the growth of technological progress and growth rate of capital. So essentially, we only allow two factors to vary: the population size and the population in working age.
Between 2000 and 2011, the Swiss GDP grew on average at a rate of 1.7% per year. This economic development comprises of technological progress (also known as multi-factor productivity) (0.5%), capital input (0.6%), and labour input (0.7%) (OECD, 2014). If technology and capital keep growing at the same pace, while the labour supply remains constant (0% growth), the GDP would grow at a rate of roughly 1% per year. According to UBS' rule of thumb, this means that the GDP growth will only turn negative, if the labour supply is shrinking by more than 1.5% p.a.
As mentioned above, the population at working age has a profound impact on the labour supply. According to our calculations, the population in Switzerland will be reduced from 8.1 to 6.2 million, if all foreign nationals had to leave the country (scenario "SWISSerland"). The Swiss population would then peak in 2032 at 6.3 million and shrink to below 6.0 million in 2060. This represents a modest decrease. However, the share of the population in working age will drop dramatically from 61.2% to 53.3% in the same period (compare Federal Statistical Office, 2014c).

Consequently, the Swiss population in working age will diminish from 5.0 million today (including 1.2 million foreign workers) to a mere 3.2 million people in 45 years. Thus, removing foreign workers will immediately reduce the work force by 1.2 million people. Thereafter, the ageing effect will influence the labour supply much more than the natural population decrease.

Based on these figures, we calculated 4 scenarios for the future development of the Swiss GDP.

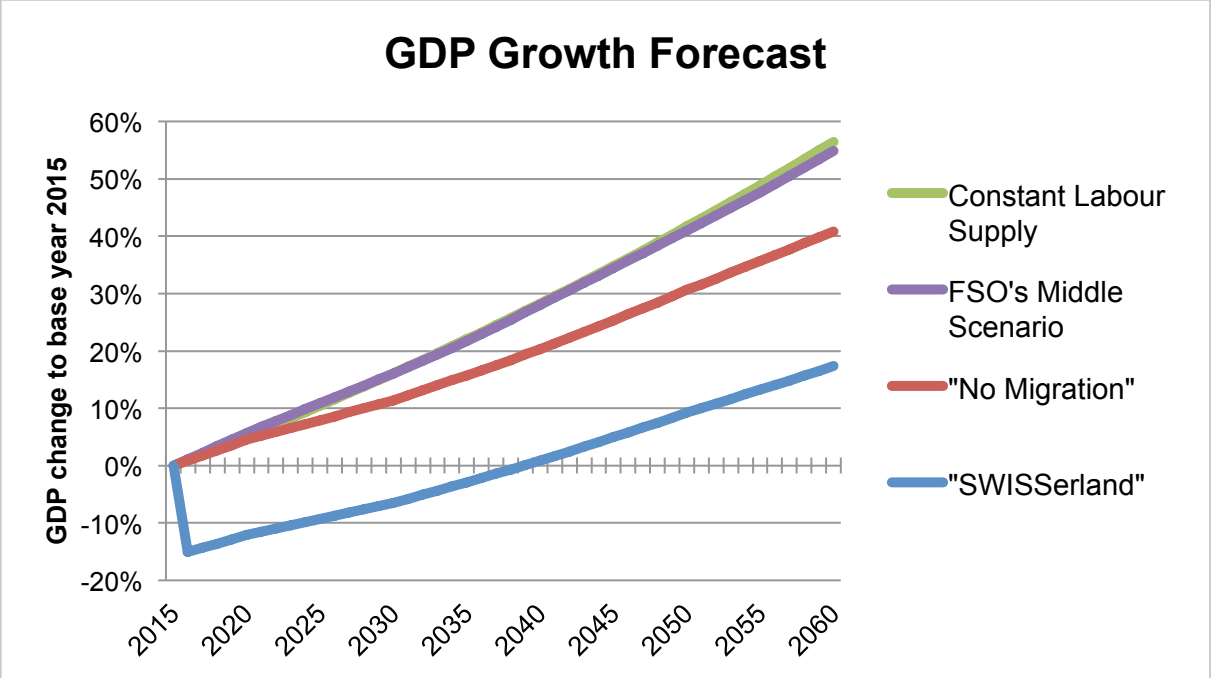

FIGURE 5: GDP GROWTH FORECAST. SOURCE: OWN CALCULATIONS, COMPARE FSO 2010

Figure 5 compares the GDP growth of the Swiss economy if a) labour supply remains constant (green), b) the Swiss population size and age structure will change according to FSO's middle scenario (purple), c) Switzerland closes its borders today and will no longer allow any migration in or out (red), and d) Switzerland closes its borders and will expel all foreign nationals in 2015 (blue).

The first two scenarios are very similar with an average GDP growth rate of roughly 1% p.a., resulting in 56% and 55% GDP growth within 45 years. In the FSO's middle scenario, the population growth and the ageing effect offset each other. As a consequence, the labour supply remains relatively constant until 2060. This demonstrates impressively, that labour supply will shrink due to the ageing effect, unless the population of Switzerland grows.

In the third scenario, the GDP is still growing, but at lower average pace of 0.76% p.a., which means 41% GDP growth between 2015 and 2060. While the population of Switzerland remains almost the same in size during this period, the ageing population will reduce the labour supply.

Scenario d is identical to scenario c, except that all foreign nationals would be expelled from Switzerland in 2015. This would result in a growth shock in 2015 and immediately reduce the GDP by 15%. According to our calculations, it will take at least 25 years until the GDP reaches the same level as today. In this case, the average economic growth over the next 45 years will be less than a third of the FSO's middle scenario.

4 PESTEL analysis

The PESTEL framework has been chosen for this part as a tool for examining the political, economic, social, technological, environmental and legal impacts of Switzerland's hypothetical policy of zero migration. By using the PESTEL analysis, we can make sure to account for a holistic view on the consequences for Switzerland in the future.

As a prior remark to our analysis, we would like to state that most of our topics cannot be solely attributed to one dimension of the framework but rather touch upon several aspects. The interdependencies between our points and also between the different dimensions of the PESTEL framework are significant. Furthermore, the following remarks and topics only represent a very small fraction of all the possible consequences for Switzerland but start to exemplify the dimensions and the aftermath of such a strict policy.

4.1 Political

Taking into account the legal aspect (s. 4.6 Legal, p. 13) surrounding Switzerland's hypothetical push for a law of no migration, the process of amendment however requires political actions first. The Federal Swiss Constitution has to be changed by popular vote and in the legislative of Switzerland (Federal Chancellery, 2014). Assuming this political process is successful and ends in closed Swiss borders, the Swiss Federal Council will have to renegotiate the bilateral agreements. The request to revise the agreement is not just a formality and will be tough. As a former exchange of letters shows, the European Union won't be willing to renegotiate, especially not about the agreement of free movement of persons (Ashton, 2014).

The bilateral agreements are mutually dependent so that Switzerland would have to renegotiate all seven treaties from the first bilateral agreements (s. also 4.6 Legal, p. 13). The consequences could have implications for several sectors. The cooperation in air traffic, road traffic, agriculture, technical trade, public procurement and science are the connected agreements, which would all be at stake and would have to be renewed (Federal Department of Foreign Affairs: FDFA, 2014, p. 9).

Economic sanctions and trade barriers of international partners could be expected as well as a reduction of the international cooperation in various authorities. Switzerland would even

offend the Universal Declaration of Human Rights if they wouldn't grant asylum to persecuted people. The political response of the international community would be very restrictive for Switzerland and heavily impact its future development.

4.2 Economic

As outlined above (s. 3.2. Economy, p. 6–8), the economy as a whole will shrink suddenly and then continue to grow even without foreigners, albeit at lower pace and assuming ceteris paribus. Obviously, this is not likely to happen but for the feasibility of our calculations it was necessary to assume this perspective. Nevertheless, some industries heavily rely on foreigners. For example, foreign workers make up more than 30% in the following industries: Hotel and Restaurant (41%), Construction (36%) and Manufacturing (31%) (FSO, 2014e). This will lead to a mismatch of labour supply and demand. Those industries will find it particularly hard to recruit talented people. At the same time, the infrastructure is still in place to provide work for many more people. Hotels will be empty, construction project will be frozen, and factories will have to be closed. Unless location factors prohibit it (as in the case of tourism), these companies will consider relocating abroad to gain access to an adequate talent pool. To protect Switzerland's location attractiveness in the long run, the government will have to create incentives for young people to pursue carriers in the Hotel and Restaurant industry, Construction or Manufacturing.

As mentioned above, a lot of production capacity will become useless and will have to be written-down. This situation of infrastructure and real estate oversupply will lead to a quick loss of the capital stock. Almost every industry will face this issue. This is a direct consequence of the reduction of the population, but is not yet accounted for in the calculation of the GDP development in the previous chapter. The reduction of the capital stock will additionally slow down the economic development for years.

Furthermore, a scenario without foreigners will have a profound impact on fiscal policies. Switzerland is attractive for wealthy foreigners due to a favourable tax regime. Foreigners who were taxed at the source ("Quellensteuer") contributed CHF 3.1 billion in 2012 alone, which does not include foreigners who fill out a tax declaration form, and the value-added tax that foreigners pay when they consume goods and services from Switzerland (Federal Department of Finance: FDF, 2014, p. 56, 68). With lower tax income, the government will have to completely reassess its fiscal policy.

Additionally, simply as food for thought: What would happen to real estate prices in Switzerland if 1.9 million foreigners were expelled and left their flats and houses?

4.3 Social

As mentioned in the GDP calculations, the percentage of people aged 65+ will drastically increase in Switzerland over the next few decades if Switzerland implements a “no migration” policy as most foreigners in Switzerland belong to a younger age group. Thus, foreigners currently help Switzerland to soften the impact of the otherwise strong demographic change (Maniera, 2013). In our hypothetical scenarios, we can expect the 65+ part of the population to grow from 17.6% today to at least 25% in 2060 (Groth, 2014, p. 36). Older people will represent a larger part of Swiss society in the future for two reasons. First of all, Swiss people will live longer (higher projected life expectancy) and secondly, lower fertility rates of Swiss women will lead to a smaller number of fertile women in Switzerland in the future further contributing to the demographic change and an overaged population.

Of course, this prospective overaged Swiss population will affect an incredibly high number of aspects of the social environment in Switzerland. However, due to the restricted length of this paper, we will focus on the coverage of the OASI and subsequently the development of the Swiss GDP.

Switzerland’s hypothetical policy has an especially big effect on the workforce in terms of the OASI (old age and survivors’ insurance) in the case of “SWISSerland”. In 2013, the potential support rate (number of working-age people aged 15-64 per one elderly person aged 65+) is 3.7 in Switzerland (CIA, 2014). When we now have a look at the future Swiss population without any foreigners (“SWISSerland”), the potential support ratio will fall drastically as fertility rates of Swiss women are lower resulting in a smaller amount of people belonging to the working-age group in the future and simultaneously, the percentage of the Swiss population aged 65+ will increase. Consequently, coverage of the OASI will be even more critical in the future.

According to Avenir Suisse (2013), there are three different possibilities to increase this coverage: pay out smaller pensions, save more while working or save for a longer period of time. However, two of these possibilities seem unlikely to solve the problem. Smaller pensions will not be accepted by the population as the conversion rate poll in March 2010 has shown and saving more money while working would lead to smaller dispensable incomes for workers which they wouldn’t like. Furthermore, if money were directly deducted from workers’ salaries, this would lower Switzerland’s attractiveness for international companies and workers. Consequently, saving for a longer time seems to be the only feasible alternative for a better OASI coverage in the future. Thus, in the scenario of “SWISSerland” the country should seriously evaluate whether it is still viable to have a retirement age of 64 for women and 65 for men. Due to people’s improved health, Swiss people nowadays live longer than in the past and would therefore be capable of working longer as well. This could also partially compensate for the forecasted decline of the GDP in

our scenarios. Obviously, also this approach of raising the retirement age will be subject to lively debates and highly controversial polls in Switzerland but we can already observe trends in other countries in Europe (e.g. Denmark, Norway, Italy and Spain) towards a higher retirement age (Avenir Suisse, 2014a). Why shouldn't it be possible in Switzerland, especially considering that Switzerland has the second highest life expectancy of all OECD countries behind Japan? For example, in Sweden, the retirement age is already automatically adjusted to life expectancy over time and only defines a minimum age for retirement (Avenir Suisse, 2014b).

On a different note, the longevity will also influence the costs of the health care system in Switzerland as older people tend to require more medical assistance and care. For example, dementia is one of the diseases whose probability increases dramatically with age (s. Groth & Gutzwiller, 2011).

4.4 Technological

Martin Maniera – a journalist of the NZZ – states that Switzerland will most probably require more highly qualified employees in the future to survive in the global competition. Ever since the agreement of free movement of persons with the European Union has come into effect, a lot of highly qualified employees have immigrated to Switzerland. Hence, if Switzerland were to close its borders and stop migration for good, it would miss out on many of these highly sought-after employees who drive innovation and technological progress. Therefore, the trend that more and more Swiss possess higher education should be pursued further to provide an adequate supply of a qualified labour force. (NZZ, 2013)

With a smaller workforce, Switzerland will also be looking for other options to compensate for the lack of workers and avoid a declining GDP (s. GDP calculations in 3.2 Economy, p. 6–8). We could see an increase in fully or partially automated services. Furthermore, the innovative development in the field of robotics might be able to partially answer these problems.

Currently, Switzerland is considered one of the most innovative countries in the world, ranking 8th in Bloomberg's survey (Lu and Chan, 2014) and even 1st in "The Global Innovation Index 2014" (GII, 2014). In general, research and technology are important drivers of innovation. Thus, in a world where Switzerland doesn't allow any migration, foreign people will not enter Switzerland and also companies might be more reluctant to setting up their businesses in Switzerland.

These factors could lead to a declining innovation rate due to several reasons. One reason is that diversity has proven to be a key ingredient for innovation, something Switzerland could only partially provide if all foreigners were asked to stay outside of the country. Another cause for less innovation could be that some inventions might not make their way to

Switzerland at all as companies could decide not to enter the Swiss market with their products. Next, Swiss research institutes such as universities employ a high percentage of foreign employees (s. Appendix 1: Percentage of foreign workers per industry, p. 18). If foreigners were banned from working in Switzerland, research institutes could face problems filling their vacancies. This gap would result because of the absence of foreign researchers and could lead to fewer innovations in Switzerland. A fourth but under no circumstances final reason could be that companies will set up their offices and innovation hubs somewhere else and rather invest their money in other countries further contributing to less innovation in Switzerland.

4.5 Environmental

A reduction of the population by 25% in 45 years, based on the scenario “SWISSerland”, will affect the environment in many ways. This section will focus on the impact on carbon emissions.

According to the IPAT equation, the environmental impact is proportional to the GDP multiplied by efficiency improvements over time (Chertow, 2000, p. 19). For reasons of simplicity, let us assume efficiency will remain constant, thus carbon emission are a mirror image of the GDP.

Since all foreigners would have to leave the country immediately, carbon emissions in Switzerland will drop by 15%. By 2039, emissions will reach again the same level as today. And by 2060, they will have increased by 17% (compare own calculations). However, carbon emissions are a global issue. Expelling all foreign nationals from Switzerland will only transfer emissions from Switzerland to other countries.

On the other hand, the population in Switzerland will shrink after 2032. This will actually slow down the pace at which carbon emissions increase. Consequently, lower birth rates tend to reduce carbon emissions. In contrast, longevity increases carbon emissions in two ways. First, if people live longer they obviously have more time to emit CO2. Secondly, the age group above 65 emits more CO2 than the population in working age, and much more than young people under 20 years due to their lifestyle choices (Zagheni, 2011, p. 390). Finally, the impact of Switzerland on the global climate will be marginal, as long as wealth and population size in other countries continue to grow.

4.6 Legal

In this part of the analysis the legal aspects of the scenario of a Switzerland without any migration will be reviewed. The “Universal Declaration of Human Rights” should be consulted which will be followed by extracts of International and European Law. The first step however

must be the change in the Swiss Federal Constitution, which has to be done by a popular vote of the Swiss population.

The article 14(1) of the Universal Declaration of Human Rights states: “Everyone has the right to seek and to enjoy in other countries asylum from persecution” (United Nations, 1948). Due to civil wars, religious and political discrimination and other forms of persecution, the radical scenario of closed Swiss borders would violate the human rights if Switzerland were not willing to accept refugees being persecuted.

Furthermore, the European Union and Switzerland signed bilateral agreements on June 21, 1999 and enlarged them on May 1, 2004 (Federal Office for Migration, 2014). The bilateral conventions were negotiated in two phases and resulted in 10 treaties. The Bilateral I from 1999 consisted of seven treaties (s. 4.1 Political, p. 9). By the means of the “Guillotine Clause” these agreements are expressed to be mutually dependant in a way that if only one of them will be denounced or not renewed, they all cease to exist (Federal Department of Foreign Affairs: FDFA, 2014, p. 9). In the second phase of the negotiations, the following three agreements were agreed upon: security, asylum and the Schengen membership, cooperation in fraud pursuits as well as the final stipulations in open questions about agriculture, environment, media, education, care of the elderly, statistics and services.

If Switzerland were to close its borders for good, the country’s new policy would conflict with the following points of the bilateral conventions (The Swiss Confederation, 2014):

- Article 2; the principle of non-discrimination, which is the core principle of the free movement of people agreement (FZA).
- Article 13; the stand-still-clause, which prohibits the States’ parties to change content of the negotiated sectors.
- Article 4; right of residence for employed and self-employed worker.
- Article 6: right of residence for people not engaging in gainful employment if they have sufficient financial resources and a health insurance.
- Article 7; right to family reunification, subject to the need of sufficient housing.

Considering these facts, there are serious conflicts with the agreements between Switzerland and the European Union. As we know from the political part, the Swiss Federal Constitution would have to be changed first, before the necessary negotiations about the bilateral agreements with the European Union could take place (Federal Chancellery, 2014).

5 Summary

This final part sums up our research and findings to provide the reader with conclusive and summarizing insights.

5.1 Summary

Since the first census in 1860, Switzerland's population grew at an average annual growth rate of 0.8% from 2.5 to 8.1 million people (Calot, 1998, p. 17; FSO, 2014b, p. 1). For the past 60 years, immigration has been a substantial factor for population growth. In this paper, we then analysed the implications of two hypothetical scenarios: First, no migration from now on and second, all foreigners have to leave immediately and then the borders would be closed. Either policy would have profound and very diverse consequences for Switzerland. Without foreigners, Switzerland's population would shrink sooner and age much faster than currently assumed. In addition, the economic growth would slow down significantly in both scenarios. For example in the second case, it would take at least 25 years to reach today's GDP again.

Subsequently, PESTEL provides a good framework to analyse possible consequences for the country. From a political perspective, Switzerland would have to renegotiate a lot of agreements, especially the bilateral agreements with the European Union. Furthermore, Switzerland's international reputation would suffer heavily under this policy and the country would probably face trade barriers and political isolation. As mentioned above, the economic development will be strongly affected, as well. The GDP growth will shrink and some industries will face serious problems since the work force in some industries depends extensively on foreign workers (BFS, 2014e). The social implications of such a policy would be big as well. It would further contribute to an overaged population and increase difficulties of providing OASI for all retired people. To guarantee pensions and increase the work force, the Swiss government could raise the retirement age for men and women. The technological impact of a hypothetical no-migration policy would impair innovations and technological progress, because Switzerland could no longer benefit from the brain drain in other countries. When looking at environmental issues, we could show that the policy would not reduce the carbon footprint on a global level, as people would just live and emit CO2 somewhere else. One aspect we showed was that older people in general have higher CO2 emissions as younger generations, which would increase CO2 emissions in Switzerland due to an increasingly overaged population. The legal situation is closely connected to politics. Switzerland signed the first bilateral agreements with the European Union in the year 1999. All international agreements would be at risk and each of the seven treaties would have to be renegotiated (Federal Department of Foreign Affairs: FDFA, 2014, p. 9)

Consequently, a no-migration policy would have unpredictable consequences whose magnitudes are hard to quantify due to variety of reasons: First of all, it is impossible to foresee all possible consequences, since there is not any comparable case of a prosperous country closing its borders. Secondly, there will be interdependencies between the

consequences reinforcing their impact. Finally, the fate of Switzerland will depend to a large part on the reaction of politics in Switzerland and abroad.

5.2 Self Criticism / Limitations

The limitations of the paper are obvious: The reliability and validity of our calculations are closely connected to the FSO's data we used. The forecast of the development of the Swiss population are already vague since the three scenarios differ strongly and one of them – the low scenario – is already exceeded. Therefore, the vagueness of the scenarios contributes to the uncertainty of our own research. All our research and calculations is based on estimations and extrapolations of a hypothetical case leading to limited explanatory power of the paper. However, the impact and consequences of such a policy can be reviewed quite well. Of course, there would be so much more to write about the aftermath of such a policy, as it would lead to fundamental changes in all areas. On the contrary, due to the restriction of 15 pages, we tried to focus on the biggest and most interesting issues.

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7 Appendix

Appendix 1: Share of foreign workers by industry

Agriculture	7.9%
Manufacturing	30.6%
Technology and IT	27.3%
Construction	36.2%
Trade and Transportation	23.2%
Hotel and Restaurant Industry	40.9%
Manager, Administration, Banking, Legal	18.0%
Health, Teaching, Scientific Jobs	18.2%
Other	23.9%
No Indication	18.8%

Source: FSO, 2014e

Universität St.Gallen

Megatrend 'Global Demographic Change' – Tackling Business and Society Challenges in 2030 and beyond

The Economic Challenges of Shrinking Societies
Germany and South Korea to tackle the demographic changes

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Coralie Grau
Marcel Köhler
Mareike Moormann

EXECUTIVE SUMMARY

Demographic trends in Germany and South Korea become more and more important with regards to the countries' future prosperity and position in the international economic field. A shrinking society, which is ageing at the same time, will most likely have a major impact on productivity and hence on the economic power of the currently strong nations. The forecasts on the future demographic structure are grim: as the share of 15-65 year olds in the population will diminish continuously, the demand for skilled labour in order to meet output levels will increase while costs for pensions put pressure on the government budget. With stable surrounding conditions illustrated in the PEST analyses, governments of Germany and South Korea will be required to take drastic actions if they wish to ensure the future wealth of their respective country. Policies in the area of education and innovation, immigration as well as social welfare and health care can contribute significantly to counterbalancing the consequences of a shrinking society. Aspects such as an improved education system granting everyone access, immigration policies targeted at skilled workers, effective support for families, and better health conditions represent selected examples of such measures. A successful implementation of different policies implies that shrinking societies will not necessarily lead to a decrease in economic power and prosperity.

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1. Introduction

Demography is an ever-present topic in the 21st century with differing population growth rates all over the world. Especially developed nations either already face a steady decline in population numbers or will do so in the near future. This paper focuses on the possible economic challenges that shrinking societies will encounter. These challenges are multifarious including issues of an ageing society, a reduced labour force, low fertility rates and thus eventually a diminishing number of citizens.

Consequently, today's leaders and decision makers are confronted with various questions: Will the living standard be reduced as the number of working people decreases? Or can a well-educated labour force or more innovation counteract this development? What are possible government actions to secure economic prosperity? What role can immigration play in mitigating the negative impacts of a shrinking population? These issues all relate to the key question of how to cope with changes in productivity caused by a shrinking population and thus reduced workforce.

This paper gives a comprehensive overview on the present and future demographic situation in two selected countries, Germany and South Korea. The aim is to assess the impact of demographic changes on the countries' strong economic position. As both countries face shrinking societies with a particular decline in the working-aged population, it is unclear whether today's high economic power can be maintained.

For the analysis of the two countries, the authors chose the PEST framework that is briefly introduced in the subsequent chapter. Chapter 3 contains the PEST analysis and a future outlook covering the timeframe until 2050 for Germany and South Korea followed by a comparison of the major findings. Building on the results, possible measures aspiring to mitigate the negative effects of a shrinking (working) society are deduced. The final chapter discusses whether a shrinking society necessarily leads to a negative economic development.

Given the scope of the paper, an in-depth analysis of both countries and their future developments is not possible. Therefore, the authors focus their analysis on those factors relevant to evaluate the future demographics and economic power of the respective country. Also, there are some limits to the analysis due to the vast quantity of studies on the future development of populations. Prognoses diverge in terms of population sizes, fertility rates and related numbers, making it difficult to assess one clear future picture. For this reason, one source of data by the UN was chosen to analyse both countries in terms of numbers in order to allow consistency throughout the paper.

2. Theoretical Framework

Economic power is not only influenced by the business environment, but also by numerous factors from other fields. In order to assess those factors in a structured way, the authors chose the PEST framework as a comprehensive environmental scanning tool. The PEST model sheds light on four different facets of the environment: political, socio-cultural, economic and technological (Needle, 2010, p. 110).

FIGURE 2: PEST ANALYSIS, ADAPTED FROM ALLEN, 2011, P. 109

Political environment

The political environment relates to the nature and stability of the political system as well as its influence on businesses. Various regulations can have an impact on the situation of a country for example immigration policies regulating the number of foreigners entitled to receive a working permit. Supranational bodies such as the European Union or World Trade Organisation, local political groups and trade unions can change the political environment (Needle, 2010, p. 111).

Economic environment

The economic dimension can be depicted employing a wide array of factors and measures. One measure is the economic structure that describes, which portion of the economy is devoted to different industry types such as manufacturing or services. Economic health is another factor. It can be measured by size of economy, growth rates, and unemployment rates. All those factors have a direct or indirect effect on consumer buying power and spending patterns. Financial institutions may play a role in shaping the economic environment as well. By decreasing interest rates they can steer the attractiveness of borrowing thus offering access to capital and affecting the amount of spending and investment (Needle, 2010, p. 113).

Socio-cultural environment

Institutions and other forces that affect society's basic values, perceptions, preferences, behaviours, and attitudes determine the socio-cultural environment (Hollensen & Opresnik, 2010). The determinants can be divided into three categories: First, demographic factors,

which relate to measures describing the composition of the population such as the number of pensioners compared to the active workforce. Second, social factors including societies' demands, preferences and attitudes for example with respect to environmental consciousness. Third, cultural factors comprising traditions, taboos, values, and rituals of the society (Hollensen & Opresnik, 2010, p. 116).

Technological environment

The technological environment has been changing quickly and fundamentally over the past two decades. It is determined by developments that lead to the creation of new or adapted technologies having an effect on company strategies and business models, jobs, and work practices (Needle, 2010, p. 119). R&D spending is one measure, which can be used to analyse the technical environment (Allen, 2011, p. 109).

Extensions

Various researchers and practitioners extended the original framework for example by including a legal (L), and an ethical or environmental (E) perspective. These additions reflect the developments of societies and trends displayed during this time (Needle, 2010, p. 120). This extended framework is called PESTEL or PESTLE.

Criticism and limitations of the framework

The purpose of the PEST framework is to provide a structured way to analyse the complexity of an entire environment. In general, its broadness can be viewed as the key strength. At the same time the challenge lies in the details, which might not be addressed due to the wide scope of the framework. One must be aware that depicting the macro-environment entirely is very complex and therefore focusing on the most relevant aspects for the respective research question is crucial. Moreover, the analysis tool should not be employed statically. Future trends and possible developments must be considered as well as the possibility that the environment does not only influence business opportunities and companies, but that companies in turn may change the environmental setting though their actions (Needle, 2010, p. 125). Finally, the analysis is often based on assumptions instead of facts since it can be difficult, time-consuming and costly to gather extensive amounts of required information.

Despite its limitation the PEST analysis adds value by providing a structured framework to investigate the current state of a macro-environment. Hence, the authors decided to apply this concept to portray and evaluate the present state of Germany and South Korea. The findings are used to examine the effects of shrinking societies on the future situation of those countries.

3. Analysis

This chapter contains a PEST analysis of the German and the South Korean societies to describe their current states as well as a future outlook for each country. Subsequently, the findings for the respective countries are compared in order to derive major trends and their impacts on the economic power and prosperity of the two shrinking societies. In order to ensure a consistent analysis of future developments, the authors chose one dependable source for consistency, the projections of the United Nations Department of Economic and Social Affairs (UNDESA).

3.1. Germany

The federal republic of Germany with Berlin as capital currently counts 81 million inhabitants. It is not only the largest economy in the European Union (EU), but also the most populous one, representing the economic powerhouse and one the major political force in the region.

3.1.1. PEST analysis

Political environment

In the German parliamentary democratic system, the basic law determines a classic separation of powers between the judicative (Federal Constitutional Court), the executive (government and administration) and the legislative (Bundestag and -rat). President Joachim Gauck as the chief of state and Chancellor Angela Merkel head the executive branch. Merkel leads the Christian Democratic Union (CDU) in a coalition together with the Social Party (SPD). These two are the biggest so-called people's parties. Several smaller parties complement them and cover the entire political spectrum ranging from left to right (Hartmann, 2014; IHS, 2014, p. 10; Paterson, 2014). The constitutional character of the German political system contributes to its stability. One single party is rarely able to form the government on its own leading to the popularity of coalitions. Despite representing different interests, all German parties support the principle of a welfare state, which provides many forms of state support for its citizens as well as for the economy (Hartmann, 2014; CIA, 2014a).

Economic environment

With a gross domestic product (GDP) of 3.2 trillion US Dollar and stable growth over the past decades (also see figure 5, appendix), Germany is the fifth largest economy and historically has been the worldwide export champion[1] until recently. The country represents the largest and most important market within the European Union (CIA, 2014a). The reasons for the strong economic positioning are sound economic conditions, a highly skilled workforce, strict

[1] Germany's share of total world trade is around nine per cent, within the EU, the share of total German exports is 63% (Hintereder & Orth, 2014).

quality standards and cutting-edge technology, all associated with the brand “Made in Germany” across various industries. The most important sectors are automotive manufacturing as well as mechanical and electrical engineering. Nonetheless, small and medium sized companies, the German “Mittelstand”, rather than the global players are the economy’s backbone. Germany does not have many raw material reserves and therefore relies heavily on the service sector, contributing 69% of total GDP (CIA, 2014a). Since 2009, the average annual unemployment rate is constantly decreasing with a current ratio of 6.8%, however a general lack in skilled workers is still apparent (Statista, 2014a). Overall, Germany remains one of the most attractive centres for international investors and is able to preserve a strong international economic position (Hintereder & Orth, 2014; EY, 2014, p. 12).

Socio-cultural environment

Germany is a modern, cosmopolitan country shaped by a plurality of lifestyles and ethno-cultural diversity originating in a 19.5% share of inhabitants with an immigration background. The country’s high education standard is combined with a generally high living standard. Nevertheless, the widening gap between wealth and poverty, requiring state subsidies to support those dealing with unemployment and lower living standards, should not be neglected (BPB, 2014; Geissler, 2014; Machhaus, 2013).

Germany is challenged by unfavourable demographic trends, namely an ageing and in the long term shrinking society (Eberstadt & Groth, 2010; also see figure 11, appendix). The currently population growth rate of -0.18% can be attributed to three major factors: a low fertility rate, an increasing life expectancy and an ageing society.

As traditional gender roles slowly vanish and a larger share of the female population enters the workforce, the fertility rate declines. The dual role of being a mother and a working woman remains very challenging due to the lack off care facilities and few fathers on parental leave (Geissler, 2014; Hardenberg et al., 2014). Remarkably though, the family remains the most important factor for Germans. For nearly 90% of them, family comes first on a list of personal priorities (The Local, 2011). Currently, a German woman gives birth to 1.36 children on average. Given this birth rate the parent generation is bigger than the one of their children (Grimm, 2014). As a result of the low fertility rate and the higher life expectancy, the overall share of young people in the population is shrinking.

In the past, Germany was able to compensate the negative population development by high rates of immigration and an increased life expectancy of 77 years for men and 82 years for women (CIA, 2014a). Germany has the third biggest share of elderly people after Japan and Italy. The government has introduced measures to increase the fertility rate and counterfeit the trend of an ageing population. However, these have not proven to be successful (Geissler, 2014; Hardenberg et al., 2014, Dettmer et al., 2013).

As mentioned above, immigration can be used to counterbalance the decreasing fertility rate and the associated lack off workers. In total, 15 million people in Germany have an immigrant background, of which 8 millions have become German citizens. Despite the government's effort to facilitate the process of gaining citizenship and achieving integration, numerous immigrants are less well educated and face difficulties to climb the social ladder (Geissler, 2014; MarketLine, 2013a, p. 63).

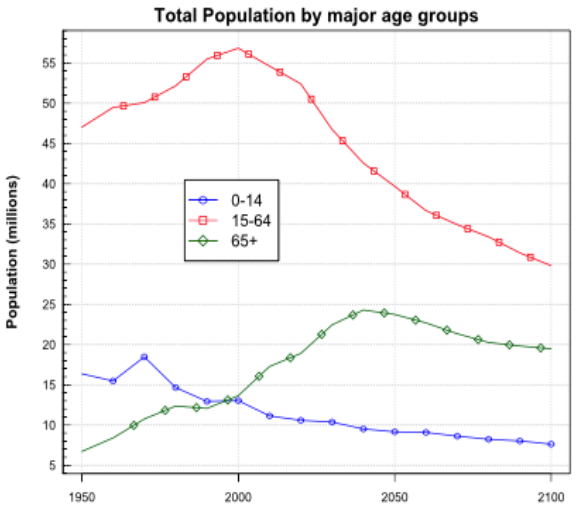
Technological environment

Germany is well known for its technological innovations. The German state and industry strongly support Research & Development (R&D) (see figure 7, appendix). The government provides different forms of assistance for example cash incentives, wage subsidies, and R&D incentives (GTI, 2014a). Automotive manufacturers and chemical companies, such as BASF and Bayer are major players in the technological environment. Moreover, companies in the renewable energy sector such as solar panel producers and wind turbine manufacturers become increasingly relevant. Additionally, numerous universities offer degrees in basic and applied sciences ensuring that future generations will be knowledgeable and capable of developing further innovations. Technology and innovation will be critical to create new opportunities sustaining the dominance of German automotive manufacturers such as VW, BMW and Mercedes Benz as well as supporting the development of other sectors on an international level (Spiewak & Schayan, 2014; CIA, 2014a).

3.1.2. Future Development

The German population will undergo significant changes in the future. According to current prognoses of the United Nations (UN) the population will shrink to 73 million until 2050 and even further to 57 million in 2100 (UNDESA, 2012, p. 3; also see figure 9, appendix). Despite the fact, that the fertility rate is expected to rise to 1.64 (see figure 15, appendix), the mortality rate will increase drastically due to the ageing society. This will lead to a negative birth-death difference, which is the main factor for the diminishing population. However, the current UN prognoses state that the death rate will fall from 2050 onwards, leading to a less negative population growth rate in the long run.

One related trend is the steadily increasing life expectancy at birth, increasing from 80.7 years in 2010 to 85.4 years in 2050 and 91.2 years in 2100. The average age will also rise from 44.3 years in 2010 to 51.5 in 2050 and remain on this level in following decades, translating into an increasing dependency ratio. It is expected to increase from 52 people depending on 100 working persons in 2010 to 83 in 2050. This development is mainly attributable to a substantially increasing amount of people aged over 65 as the number of people younger than 15 is shrinking (also see figure 12, appendix). Figure 2 illustrates that the share of people aged between 15 and 65 years, i.e. the workforce, will decrease



dramatically in the coming decades, thus having a major impact on economic output. The number of people in paid work (15-65 years), which today amounts to 50 million, will shrink to approximately 37 million by 2050 (Statistisches Bundesamt, 2009, p. 6; UNDESA, 2012a, p. 2). Even with an invariant productivity, the economy will suffer due to the reduced availability of workers leading to rather moderate expectations on economic growth.

FIGURE 3: TOTAL POPULATION BY MAJOR AGE GROUPS IN GERMANY (UNDESA, 2012A, P. 2)

Next to the negative trend in the working population, the rise in older people will also have an effect on the economy. Overall life expectancy is rising to 88 years in 2050, increasing by 8 years compared to 2010 (UNDESA, 2012a, p. 3). German social welfare spending already accounts for 35.5% of GDP, but the developments will lead to an overwhelming increase of social welfare costs due to the rising expenditures for pensions and health that can already be observed today. In order to keep people as long as possible within the workforce the German government will be required to invest continuously. This is also relevant for women as the doubled burden regarding working and raising children will only increase with the pressure of keeping up with the demanded productivity.

3.2. South Korea

The republic of Korea, or South Korea, with Seoul as capital has a population of 50 million people. In addition to its strong ties to the United States of America, the country is connected to China, Japan, Russia and the EU, making it an important player in the South East Asian region.

3.2.1. PEST analysis

Political environment

South Korea experienced a long history of political instability, strongly influenced by the conflict with its sister state North Korea, but also by military coups and restricted political freedom. The situation changed with the introduction of the democratic system in 1986,

which is characterised by the centralised power in the hands of the president[2]. The executive branch is represented by the current president Geun-Hye Park (NFP) as the chief of staff, supported by Prime Minister Chang-Keuk Moon as the Head of Government. The National Assembly represents the legislative power and the Supreme Court as well as the Constitutional Court form the judicative branch. In a multiparty system where a single party can form the government, two parties dominate, the New Frontier Party (NFP) and the New Politics Alliance for Democracy (NPAD), which both have a tendency to the right wing of the political spectrum (CIA, 2014b; Datamonitor, 2008, p. 12, MarketLine, 2013b, p. 14).

Political decisions are still heavily influenced by the military, which can be partly attributed to the instable relationship with North Korea. There have been efforts to improve the relationship's stability, yet without yielding noteworthy results.

Economic environment

With a steady GDP during the last years and a current GDP of 1.6 trillion US Dollars South Korea has become the 12th largest economy in the world (also see figure 6, appendix). The country is particularly strong in exporting technology and telecommunication devices, but also in automotive productions, chemicals and steel. South Korea has one of the lowest unemployment rates worldwide with an annual average of currently 3.1% (Statista, 2014b). The service sector contributes 58.2% of the entire GDP. The government has strongly supported the economic development, especially after the Asian crisis in 1998 and the worldwide economic crisis in 2009 by financial and economic restructuring efforts and liberalisation attempts. Despite the high importance of big South Korean conglomerates such as Hyundai, small and medium enterprises make up the majority of all enterprises, covering 87% of employment and 50% of output. However, the markets are highly regulated and are characterised by a lack of competitiveness, especially on regional level (CIA, 2014b; MarketLine, 2013b, p. 20).

Stringent rules on imports and foreign direct investment as well as the unpredictable behaviour of North Korea pose a serious obstacle for international investors and economic partners of South Korea (Datamonitor, 2008, p. 16, 20; MarketLine, 2013b, p. 16).

Socio-cultural environment

South Korea has a largely homogenous population with only a small share of immigrants. The country has one of the highest literacy rates worldwide with generally well-educated and highly qualified citizens. High minimum wages encourage people to join the workforce, thereby resulting in a high level of output and continuous productivity. Overall, the living

[2] The president is head of the state, head of government and chief if the armed forces, can execute and amend any laws or policies and also may dissolve the national assembly.

standard in South Korea is higher than in other Asian countries (CIA, 2014b; Datamonitor, 2008, p. 19).

However, the demographic situation in South Korea is rather difficult. With a population growth rate of 0.16%, the country faces major challenges and will soon start to shrink. A low fertility rate of 1.23 children per woman, an increasing life expectancy of 77 years for men and 83 years for women, and a generally ageing society will cause a negative development in terms of future population growth (also see figure 13, appendix). Despite the fact that social welfare spending has been constantly increased over the past years, the amount still accounts for only a third of the European average (CIA, 2014b; MarketLine, 2013b, p. 25).

With respect to the role of the family in 1997 73.7% agreed that a married couple must have a child. Only eight years later this number dropped to 23.4% (KIHASA, 2005, p. 236, cited in Suzuki, 2008, p. 32). This change in social norms accompanied by high education costs and difficulties related to combining a career with taking care of one's children contribute to a decreasing fertility rate (Suzuki, 2008, p. 32-33). The government has implemented different policies, such as tax reformations, alternatives to private education and childcare support. However, all of these measures have not been very fruitful until today (Suzuki, 2008, p. 37-38).

As mentioned, South Korea has a very homogenous population (CIA, 2014b; Lim, 2011). The overall attitude towards foreigners and foreign companies is rather critical, which is especially articulated by trade unions. As a result, immigration can currently not be used as an effective tool to work against the negative demographic trend (Thomas, 2012; Glionna, 2009).

Technological environment

South Korea is one of the largest technology markets in the world and has been known for technological innovation. A well-developed infrastructure and established technology sector lead to an average short time-to-market as the gap between creating an innovation and its commercialization tends to be rather small. Companies like Samsung Electronics, LG Electronics, and Hyundai are South Korean companies, which became major regional and international players due to their technological developments (Datamonitor, 2008, p. 21). The South Korean government actively supports research and development efforts, which can be seen in the increasing share of R&D investments that underline its importance (Datamonitor, 2008, p. 22; Ro, 2014; also see figure 8, appendix).

3.2.2. Future Development

Until 2050, South Korea's population will only change to some extent with regards to size, but heavy changes are expected later. It is actually expected to increase until 2050 to 51 million but will then rapidly decrease to 41 million until 2100 (UNDESA, 2012b, p. 3; see figure 10, appendix). The prognosis for the fertility rate is positive, increasing to 1.68 (see

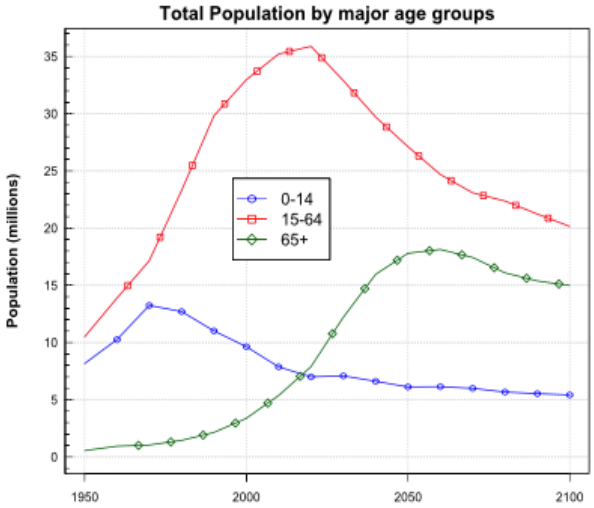


figure 16, appendix). However, starting in 2050 the number of deaths will exceed the birth rate, causing the shrinking of the society.

The shift in average age of the population, from 37.8 years in 2010 to 53.5 yeas in 2050 illustrates the effect of an ageing society (UNDESA, 2012b, p. 3; Statistics Korea, 2011). Figure 14 in the appendix illustrates the resulting pot-shaped pyramid. The dependency ratio and its forecasted development are another indicator of the future consequences the nation will be facing. The ratio will more than double, growing from 37.6 in 2010 to 88.2 in 2050 and even further to 101.3 in 2100, highlighting the severe pressure on the working population. This can also be observed in figure 3 and the convergence of the working population and the population older than 65. The South Korean population already has a high level of productivity. Hence it will be very difficult to retain economic growth as the workforce is reduced continuously (UNDESA, 2012b, p. 3).

FIGURE 4: TOTAL POPULATION BY MAJOR AGE GROUPS IN KOREA (UNDESA, 2012B, P. 2)

The ever-increasing amount of elderly people will put further pressure on the economy of the currently growing country. Life expectancy at birth will increase from 80.0 years in 2010 to 88.4 years in 2050 (UNDESA, 2012b, p. 3), inflicting enormous retirement and health costs. Thus, the South Korean government must aim at keeping its population healthy and agile. Especially South Korean women are already under a lot of pressure as they are expected to raise children and meet their working requirements at the same time. The currently rather low spending on social welfare is not sufficient to deal with these challenges. A current share of 9.2% of the GDP will require major investments in this segment, possibly forcing the domestic budget to be redistributed to the benefit of social expenses.

3.3. Comparison between Germany and South Korea

Germany's and South Korea's demographic and economic development support the validity of the demographic-economic paradox, highlighting the inverse relationship between fertility rate and economic growth in developed countries. The paradox may be stated in a simplified way as "the greater the wealth, the fewer children". The phenomenon can be explained by the rising opportunity costs of having children with more and more women participating in the

labour force (Kröhnert & Klingholz, 2005, p. 4). However, when taking future prognoses into account, an opposing trend at least with respect to the fertility rate may be identified[3].

In the coming decades, two variables will influence GDP per capita and hence the economic strength of Germany and South Korea[4]: The growth of the labour force participation rate and the future development of productivity (Börsch-Supan, 2011, p. 22). The UN estimates a rising fertility rate in the future, thereby positively influencing the labour force participation rate in both countries. This effect can be strengthened by a high rate of immigration, given that certain productivity standards among the immigrant workers can be assured. In this context, Germany faces other challenges than South Korea as will be explained in chapter 4.

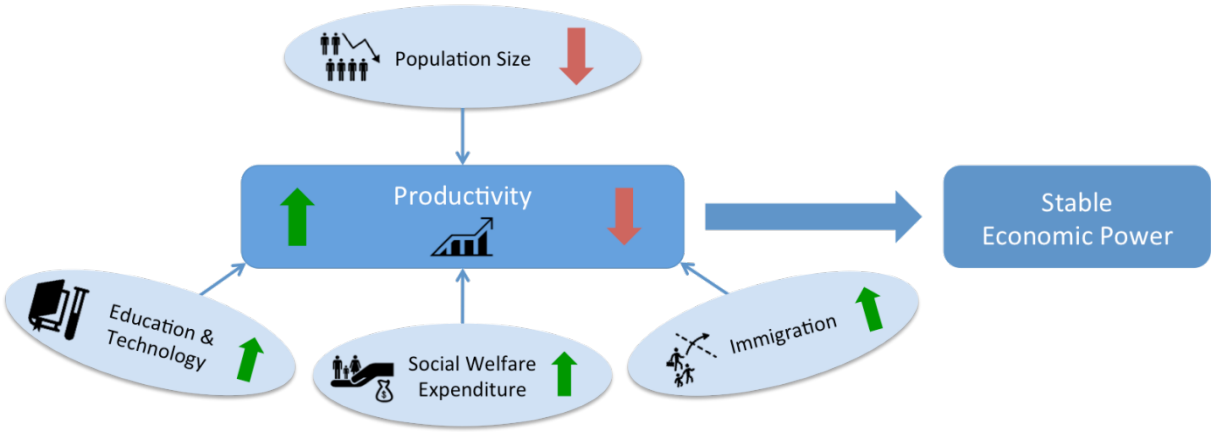


FIGURE 5: THREE MAIN LEVERS TO STABILISE ECONOMIC POWER (SOURCE: OWN ILLUSTRATION)

The authors decided to focus on economic productivity and its contributing factors. Figure 4 illustrates the three main factors, which potentially affect productivity levels and are addressed by the measures proposed in the following chapter: education and technology, immigration, and social welfare expenditure. Table 1 (see next page) shows key figures to compare Germany and South Korea, listed in the three major categories that may have an impact on the future economic power of the two nations via increasing productivity.

Looking at the data, significant similarities can be observed, especially regarding education. Increased spending on education and R&D show that both, Germany and South Korea, are highly committed to maintain an extraordinary education standard and support a society driven by innovation (Statista, 2014a; Statista, 2014b; Ro, 2014; GTI, 2014b). Variation between the countries can be observed by looking at the topic of immigration. Despite a rather similar net migration rate, the German society is more heterogeneous, but at the same

[3] The indicated rising fertility rate by the UN is a very optimistic forecast and in this case only used for consistency reasons. Other prognoses state a stable or even slowly decreasing fertility rate for both countries in the future.

[4] In general, economic power or strength cannot simply be derived from GDP per capita. Based on the PEST analysis and hence in the context of two already well-established and economically strong nations such as Germany and South Korea, GDP per capita can be taken as a useful indicator to measure it. Further the savings rate will also have an impact on future GDP. However, it will not be discussed in this paper.

time already shrinking in numbers. In contrast, South Korea is expected to start shrinking in 2050, while having a very low share of foreigners (CIA, 2014a; CIA, 2014b). Low fertility rates and growing dependency ratios require a solid social welfare system and related expenditures. Whereas Germany, as one of the big social welfare states among the OECD members, spends approximately one third of its GDP per capita on social welfare, South Korea has very low social welfare expenditure (Statistics Korea, 2011, p. 2; Statistisches Bundesamt, 2009, p. 9; UNDESA, 2012; OECD, 2009, p. 107).

Combining these findings with the analyses of chapter 3.1 and 3.2, the two nations need to focus on three different fields in order to maintain their position of economic power despite their shrinking societies. These three aspects are increased spending on education as well as R&D, an adapted immigration policy, and an improved social welfare system including health, whereas these have different levels of importance for both nations.

	Germany	**South Korea**
Population size	81 m (73 m I 57 m)	50 m (51 m I 41 m)
Population growth	-0.18% (-0.5% I -0.4%)	0.16% (-0.3% I -0.4%)
Education		
Education spending	6.6% of GDP	7.6% of GDP
Literacy rate	99.0%	97.9%
Unemployment rate	6.8%	3.1%
Average R&D investment	3.0%	4.4%
Immigration		
Net migration rate	1.3 (1.2)	1.2 (0.8)
Immigration ratio	19.5%	<1%
Social Welfare		
Fertility rate	1.36 (1.64)	1.23 (1.68)
Share of 15-64 years-olds	65.8% (54%)	72.2% (52%)
Dependency ratio	52.0 (83.0)	37.6 (88.2)
Average social welfare spending per capita	35.5% of GDP	9.2% of GDP

TABLE 1: RELEVANT INDICES REGARDING EDUCATION, IMMIGRATION AND SOCIAL WELFARE (VALUES IN BRACKETS REPRESENT PROGNOSES FOR 2050 I 2100; SOURCES: AUTORENGRUPPE BILDUNGSBERICHTERSTATTUNG, 2014, P. 36; BPB, 2012; CIA, 2014A; CIA, 2014B; CIEB, 2014; GTI, 2014B; HADID, 2014; OECD, 2009, P. 107; RO, 2014; STATISTA, 2014A; STATISTICS KOREA, 2011, P. 2; STATISTISCHES BUNDESAMT, 2009; UNDESA, 2012A, P. 1-3, UNDESA, 2012B, P. 1-3)

4. Measures

The three major levers namely education, immigration and social welfare as addressed in chapter 3.3 provide the basis for tackling the challenges associated with a shrinking society. In this chapter, the authors discuss different policies and measures that could allow Germany and South Korea to remain economically successful. It is illustrated that a shrinking society and correspondingly a declining workforce do not inevitably lead to lower productivity levels. Hence, economic power may be maintained if governments intervene in a meaningful way. Governments must focus on providing access to education, the infrastructure for immigration of qualified workers and a welfare system supporting its population. As Eberstadt & Groth (2008, p. 13 et seq.) claim, demographic policy options for shrinking societies are rather limited but no dead end. Health and knowledge can serve as major drivers for economic growth and rising living standards, even in societies characterized by significant population ageing and demographic shrinkage (Eberstadt & Groth, 2008, p. 15, 17). Both countries still have a chance to escape the curse of a shrinking population leading to less economic power and output. This destiny can currently be observed in countries like Japan where the population is shrinking and the state is heavily in debt, denoting only stagnating growth with a predicted long-term decline (Leipziger, 2014).

4.1. Education and Innovation spending

Education can affect productivity and innovation positively and therefore is a major driver of potential output rates. By enabling the population to enjoy a sound education, governments may be able to create a more productive as well as a more innovative population. Such a population has the competencies to fulfil future growth targets to maintain the country's economic positioning – even despite a negative trend in the absolute number of citizens. A suitable education can lay the foundation for training skilled workers and for developing new technologies. The latter is crucial for shrinking societies especially in connection with a reduced labour force, as technology allows for substituting less skilled workers with robotics. The basic idea must be to educate the population while paying attention to the diversity of skills and knowledge to create a pool of very skilled workers for all industries and jobs. It is utterly important to not only value high school and university degrees with high recognition and appropriate wages, but also vocational education and apprenticeships for different handcrafts. Manufacturing enterprises struggle to find suitable trainees, as wages are comparably low in this sector. By supporting all industries to educate the "right" people in the "right" area productivity can be increased (Haas, 2013). The ultimate goal must be to have a diverse workforce capable of accomplishing the necessary tasks to run a successful economy.

Germany has a decent education system, but compared to South Korea the overall education standard is lower. This disparity can be attributed to remaining differences in standards between the German states and a high share of immigrants with diverging educational backgrounds. Despite several improvements, strong social imbalances with regards to participation in the education system persist. Children growing up in families with a certain academic affinity as well as those without an immigration background have better chances of receiving a higher level of education (Autorengruppe Bildungsberichterstattung, 2014, p. 6). The German government is facing the challenge to facilitate access to the education system for people from all social backgrounds (Haas, 2013). These measures support the process of building a better-educated workforce on all levels and across all degrees and jobs.

In South Korea, education is a rather expensive good, oftentimes demanding up to 10% of people's average income (CIEB, 2014; Leipziger, 2014). Costs of visiting one of the top universities can even amount to 70% of household (Guilford, 2013). Currently, South Korea's manufacturing sector is very productive. Nevertheless, the government needs to implement measures aiming to build an education system, which is accessible for the entire nation's population. This could have a positive effect on the productivity in the service sector, which employs the majority of South Korea's people. Such a development would counteract the trend of needing an expensive private education in order to get a high-income job in one of the big conglomerates that only employ 6% of the population and tend to go overseas for production (Guilford, 2013). There have been some efforts in order to create alternatives to private education, which have not proven to be very successful yet. Hence, a combination of affordable and excellent public education and a strengthening of small and medium enterprises may be key to improving productivity not only in conglomerates but also in the increasingly dominant service sector (Leipziger, 2014). This is also essential in order to tackle the high youth unemployment rate apparent in South Korea.

4.2. Immigration Policy

Immigrants play an important role in a country's economic development as they often can fill positions that domestic workers are neither able nor willing to take.

Germany has a tradition of attracting immigrants in order to increase its workforce. This can be observed in the German history when output targets could not have been met in the 1970s and low skilled workers were invited as guest workers. Today, in times of rather low unemployment and growing demand due to rising incomes, immigrants can and must help once again to meet this demand. Due to a general lack of workers, it is vital to create credible incentives for foreigners to enter the German market. This is especially true for the care

sector, which is highly depending on human capital as such jobs can never be carried out by robotics (Wilson, 2013). Combined with possible educational aspirations of the government as mentioned before, skilled workers not only from Germany, but also from foreign countries can be a factor influencing the health and growth of the German economy. The membership in the EU as well as Germany's geographic position support such measures as there are many other states currently suffering from high unemployment rates, for example Spain. Incentive programs attracting young international academics to join the German labour force are already in place but have to be enlarged as an important step towards an immigration policy aiming at increasing both the size and the quality of the workforce.

In the future, the South Korean economy is likely to heavily depend on immigrants joining the labour force in order to keep output at constant levels. However, society's negative attitude towards foreigners poses a serious barrier for any policies aiming to increase immigration. Moreover, the geographic position of the country is an additional barrier. The only direct neighbour North Korea as well as the closely located economic power China would be the first candidates to attract foreign immigrants, but due to historically uncertain relations between those countries the immigration policies remain a complex topic. Hence, South Korea faces two main task: On the one hand they have to decide which countries to target in terms of attracting immigrants. On the other hand society's attitudes towards foreigners need to be altered (Hadid, 2014).

4.3. Social Welfare and Health spending

Several of the most important measures to sustain productivity and economic strength touch upon social welfare and health spending. Key topics comprise the supportive inclusion of women and elderly people in the labour force as well as an improved state of health (Huber & Groth, 2013, p. 4 et seq.). Social welfare policies are not necessarily the primary solution for countries to tackle the problem of low fertility rates, diminishing population numbers and reduced output. Nevertheless, they represent an important pillar to maintain economic power in the long run. Eberstadt & Groth (2008, p. 15) state that health can be seen as potential source of wealth and investments in this sector are vital. In general, industrial nations with high social spending per capita also have positive economic growth rates, falsifying critics' notion that social spending obstructs growth (Kisker, 2006, p. 7).

The German welfare state has introduced various different measures over the last years in order to support its economy. Many of them were focused on families and especially on enabling women to be a member of the active workforce while having children. Despite the tremendous efforts of German family politics not all policies showed the desired positive effects (Hardenberg et al., 2014). In the future, a comprehensive approach to policy planning

is needed to further enhance the possibility of combining family and work. Generally improving health facilities with ever-advancing medicine and thus longer life expectancy entail potential to support the economy as well. It is reasonable to consider the possibility of keeping workers longer in the labour force. The retirement age has already been raised to 67 but special conditions allowing retirement at 63 are discussed at the moment. A high retirement age does not only increase the workforce, but thereby has a positive impact on the total dependency ratio and may allow for a reduced pressure on the pension system in the future (Groth & Eberstadt, 2008, p. 46). At the same time, the German state should optimise its health care system and solve current debates about possible unfair treatment. Keeping its population in general and the workforce in particular healthy is a crucial task when confronted with a negative population growth rate.

In contrast to Germany, South Korea looks at a very long way to go before achieving a well-functioning and mature social welfare system as the one of Germany. The South Korean government has intensified its efforts to increase the fertility rate and even though it is not necessarily the main solution for South Korea, pro-natalist policies may allow governments to "delay fertility decline and to narrow the difference with moderately low fertility countries" (Suzuki, 2008, p. 39). This implies that the South Korean government will have to increase its social welfare and health spending drastically, especially when it comes to the support of women in work. With a high divorce rate, childcare is a major factor influencing the possibility of women joining the workforce. Hence, improvements in this area can increase the labour force and positively affect economic output. Further, the current retirement age is 60 years, which is very low for the respective life expectancy. Hence, the government should consider increasing this age in order to increase the size of the workforce, influencing productivity.

5. Conclusion

The demographic trends in Germany and South Korea leading to a shrinking society will heavily influence the future economic power of both nations and hence will shape future political decision-making. The PEST analyses show that both countries are well situated with a stable political system, internationally competitive industries, a well-educated workforce and strong technological capabilities. At first sight, the effects of an ageing and in the long run shrinking population may be associated with a negative impact on the economy and indeed should not be underestimated. Especially a diminishing workforce will leave its mark on production and output, which in turn might lead to a declining economic performance.

However, the proposed measures in this paper give a good overview on potential options to counteract the negative impacts outlined above. Focusing on the aim to maintain productivity and output at current or even higher levels, policies in the area of education and technology, immigration as well as social welfare and health can play a decisive role. In fact, countries like Germany and South Korea are international recognised as technology leaders and have many different tools at hand to address demographic change. Utilizing those tools wisely may enable them to master the demographic challenges and to remain amongst the top players in the international economic environment. The current challenges may even trigger higher education standards, increased rates of innovation and push governments to create an exemplary social welfare system. Those fields of action highlight that a shrinking society is not inevitably leading to a loss of economic power and prosperity.

Due to the limited scope of this paper, the authors focused on two case examples to analyse the effects of a shrinking society on a country's economic power and prosperity. The measures derived from the analysis are thus not final, meaning that other possible fields of action to counterbalance the negative effects of future demographic conditions may exist. Furthermore, the addressed measures require further research and elaboration to deduce concrete recommendations and guidelines on how to deal with the consequences of shrinking societies. In addition, quantitative studies are necessary to determine the actual effects of the proposed measures.

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7. Appendix

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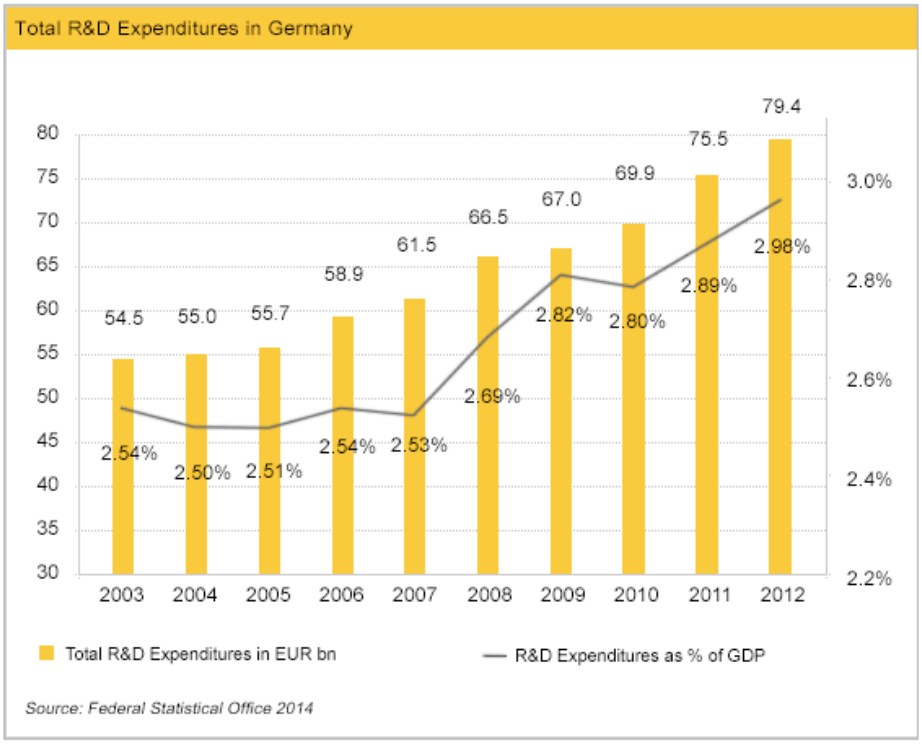
FIGURE 7: GDP GROWTH RATE IN SOUTH KOREA (TRADING ECONOMICS, 2014B)



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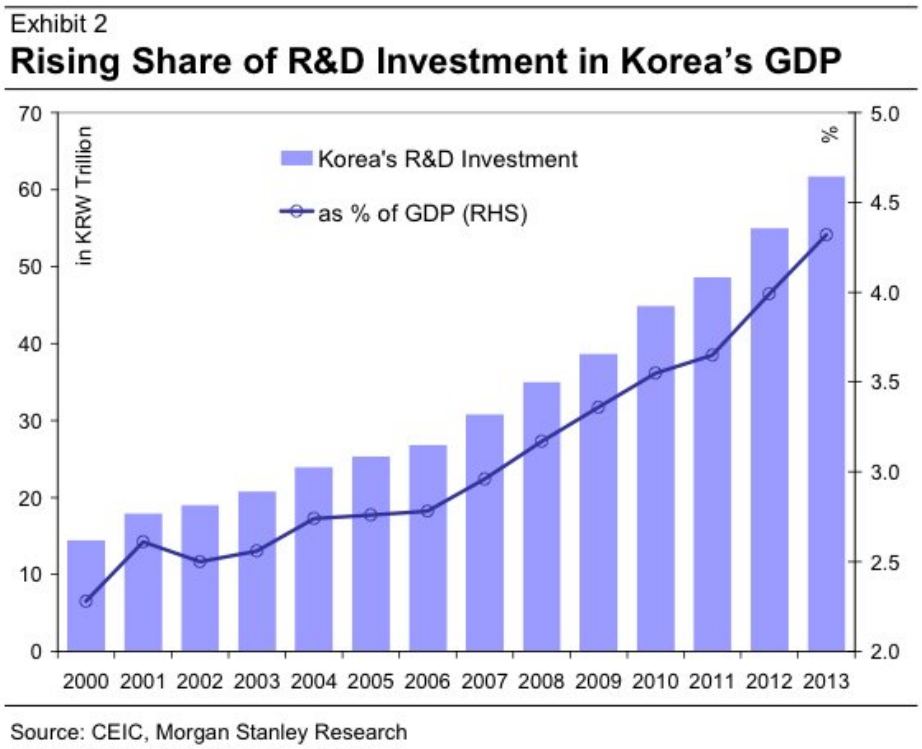


FIGURE 9: SHARE OF R&D INVESTMENTS IN KOREA'S GDP (RO, 2014)

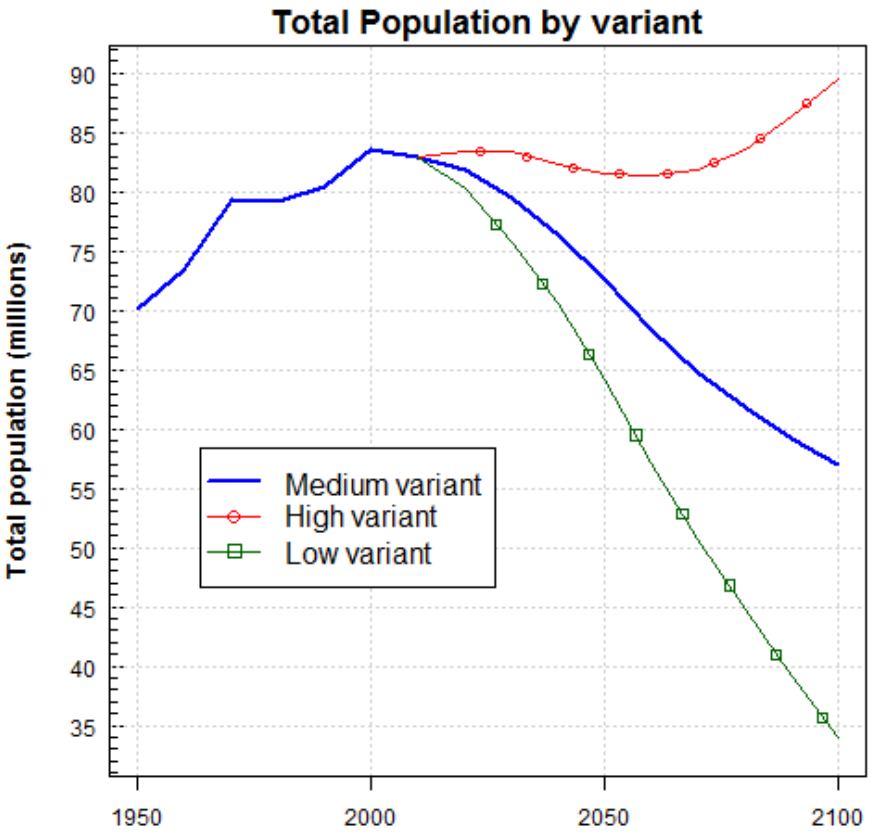
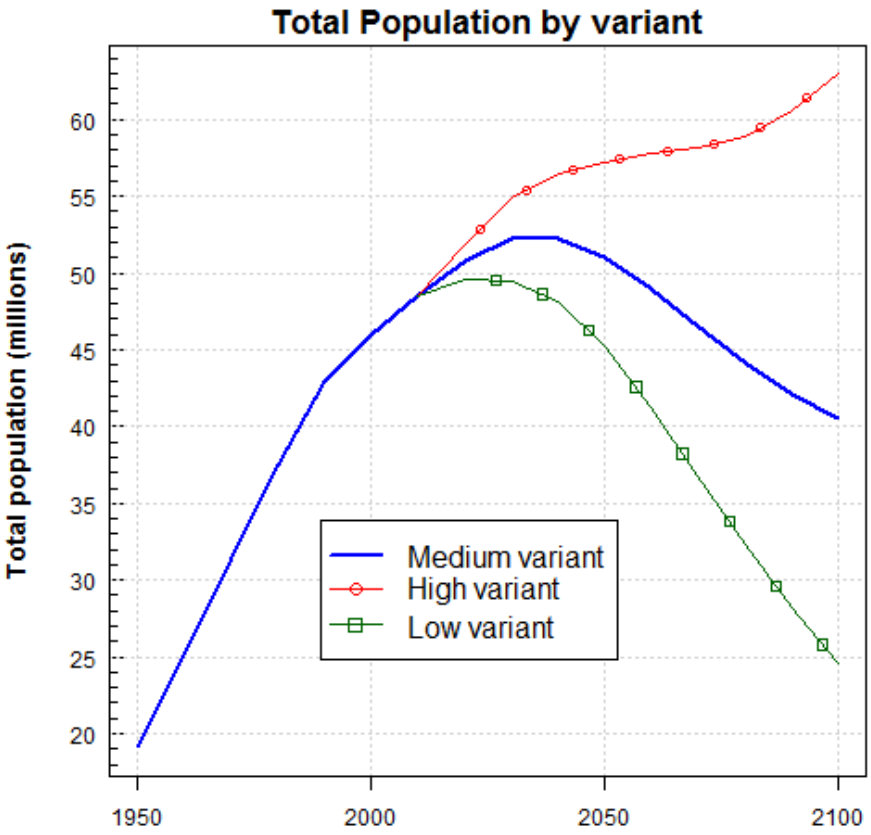


FIGURE 10: TOTAL POPULATION BY VARIANT IN GERMANY (UNDESA, 2012A, P. 2)



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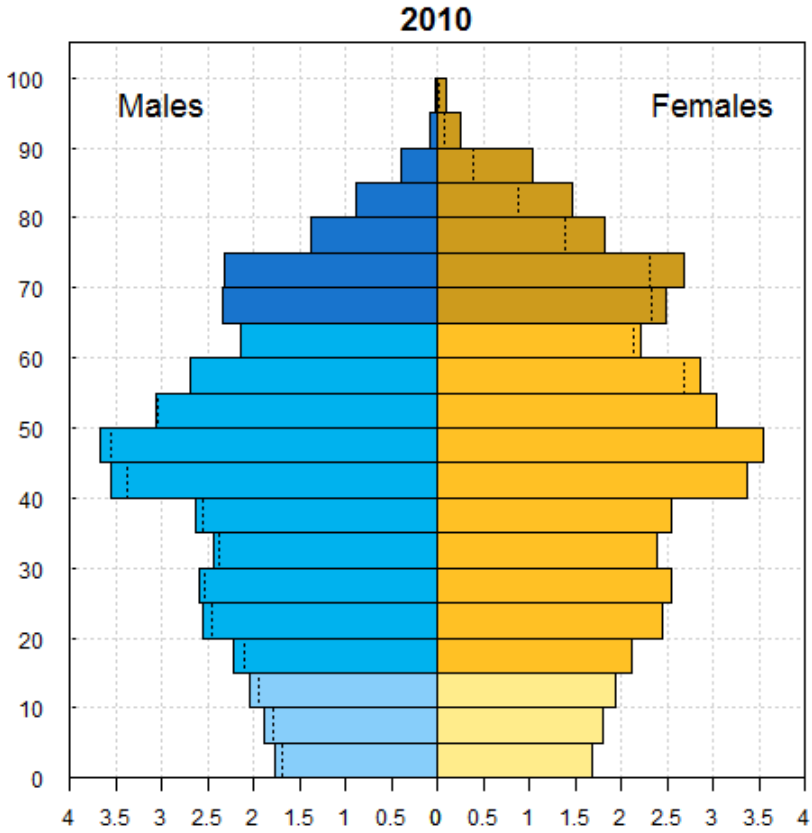

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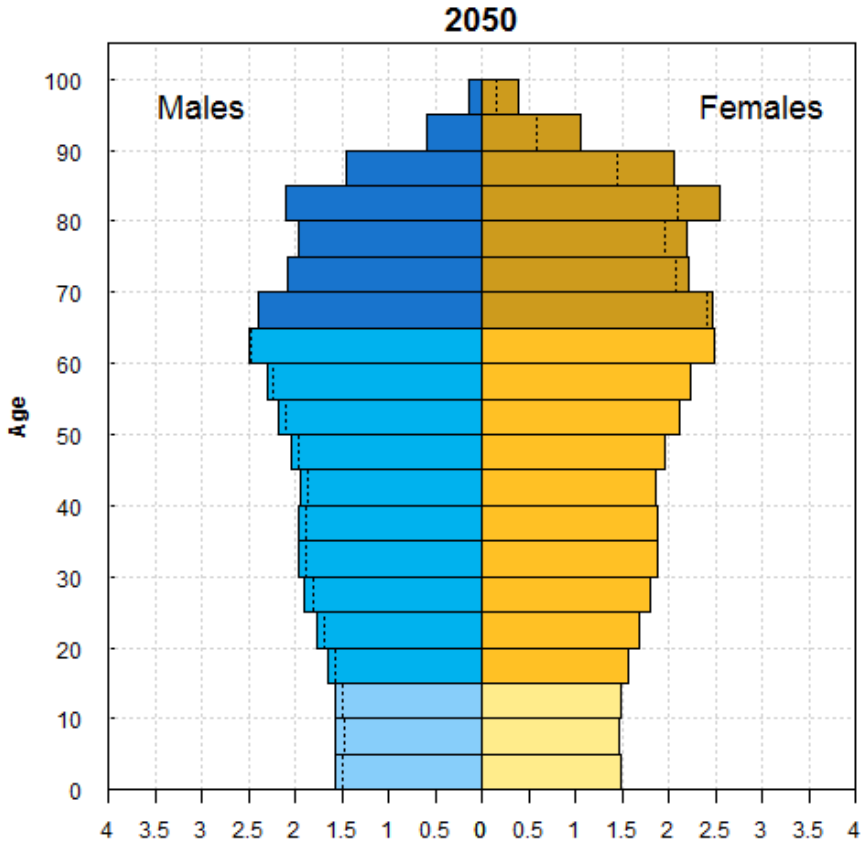

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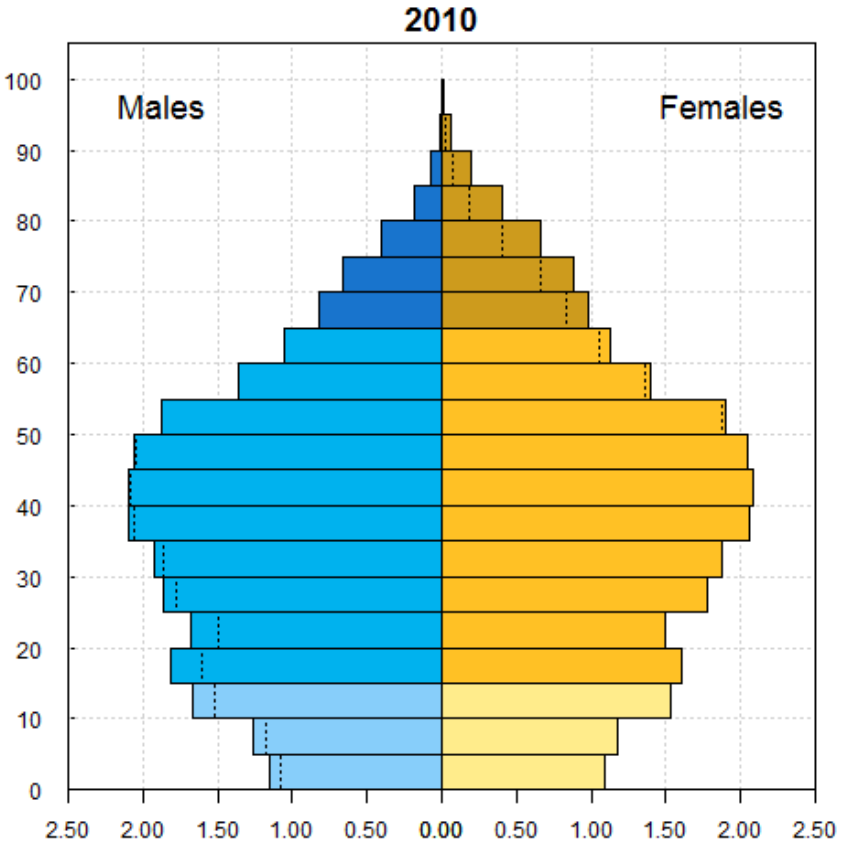

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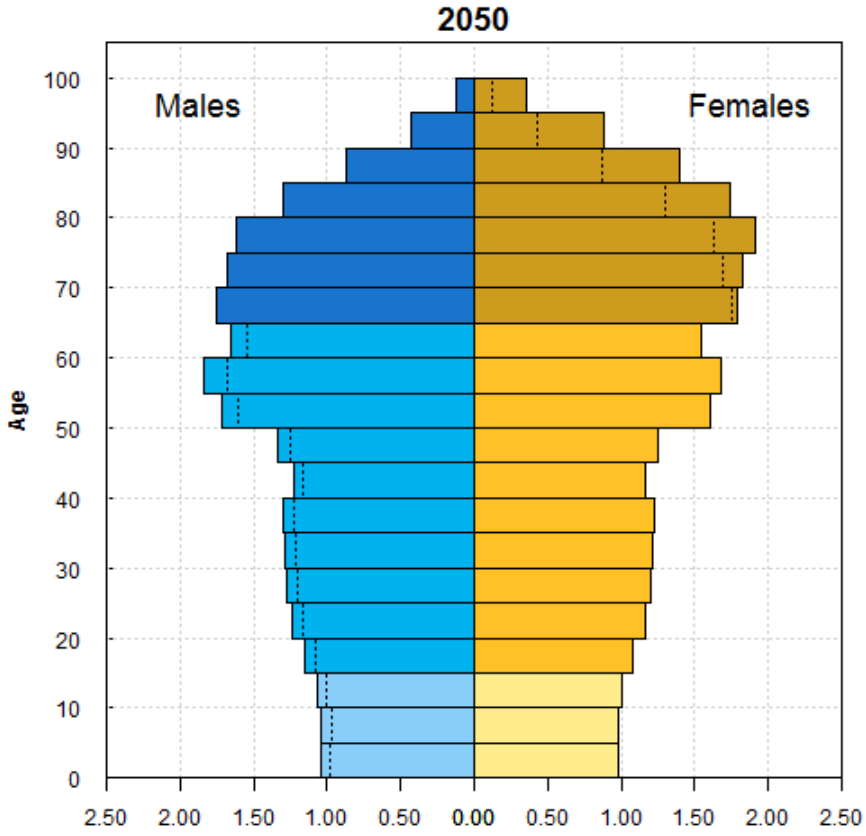

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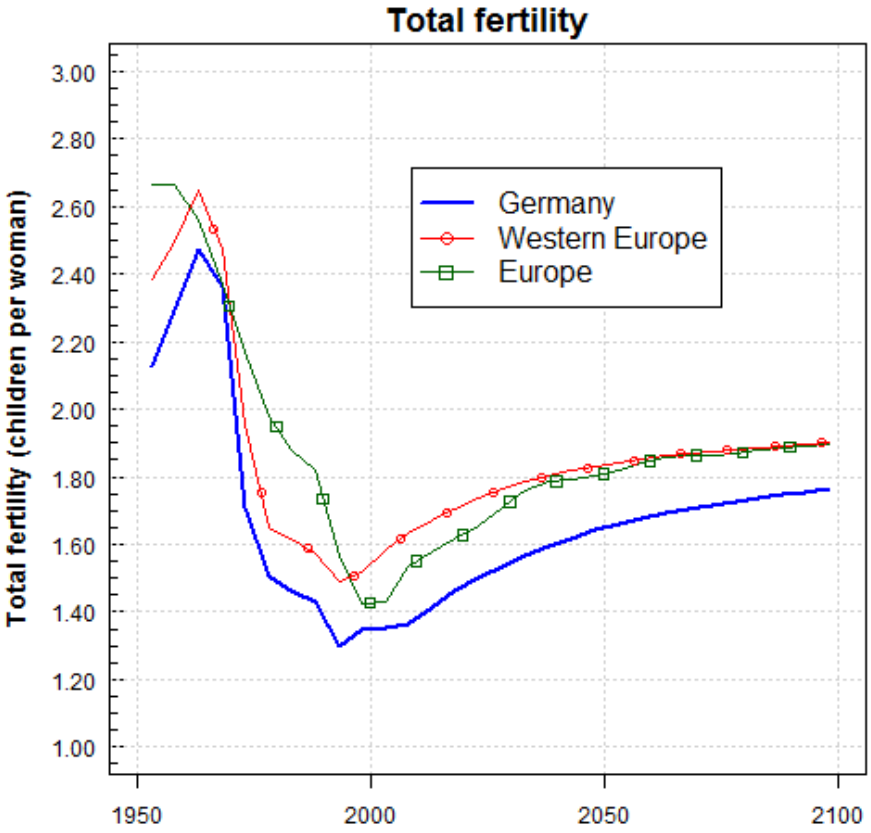

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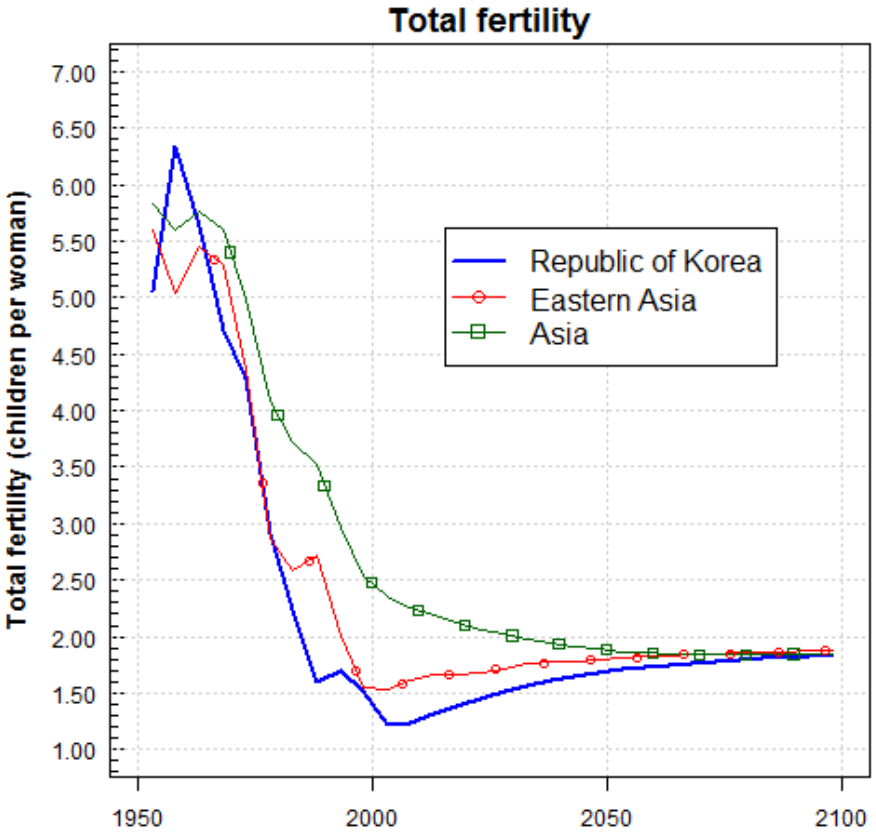

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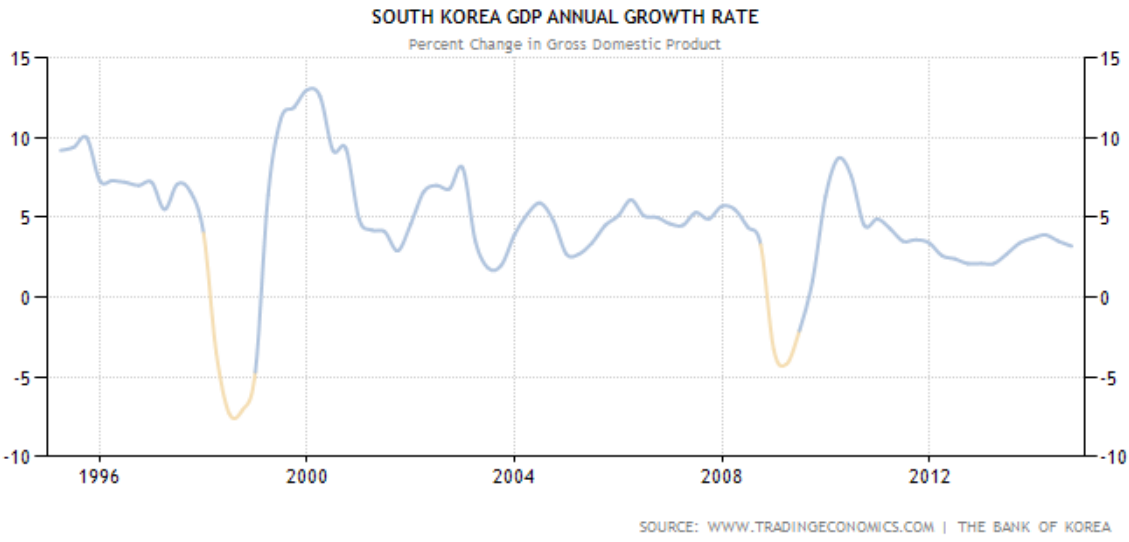

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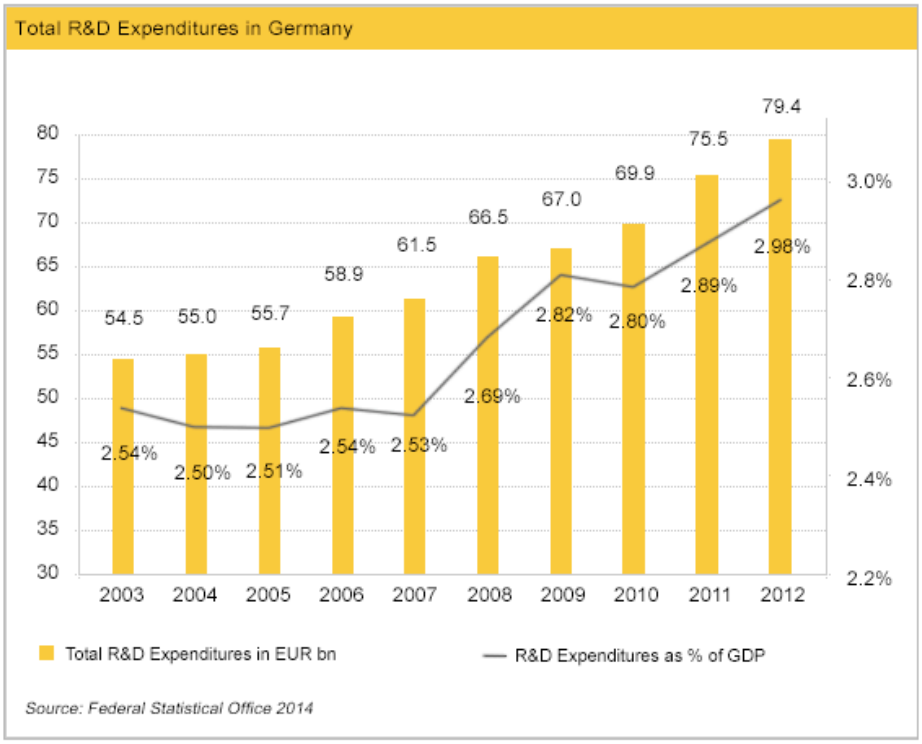

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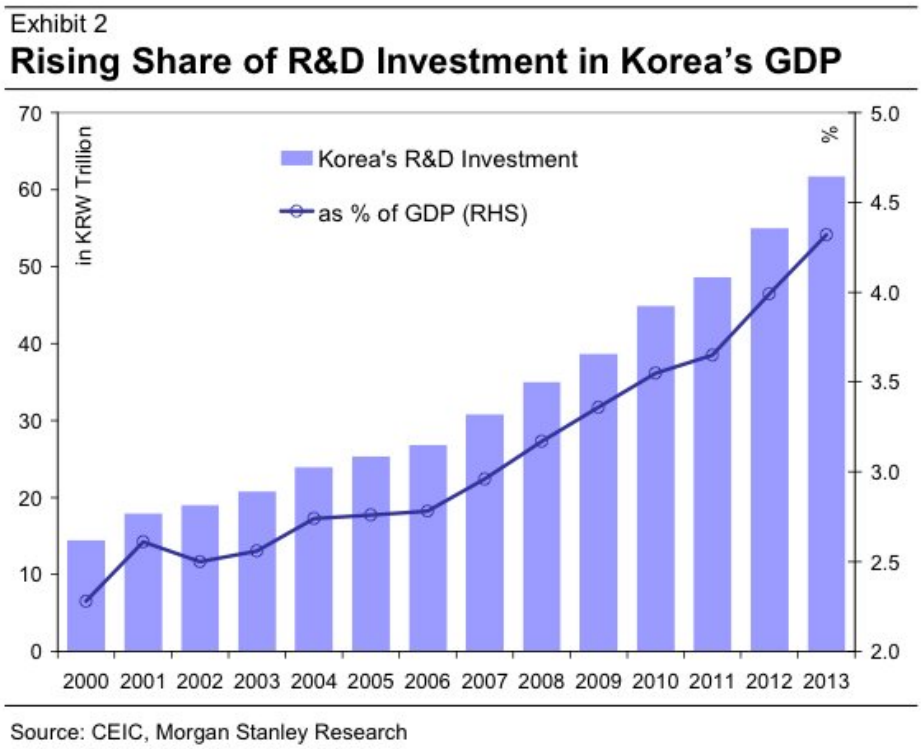

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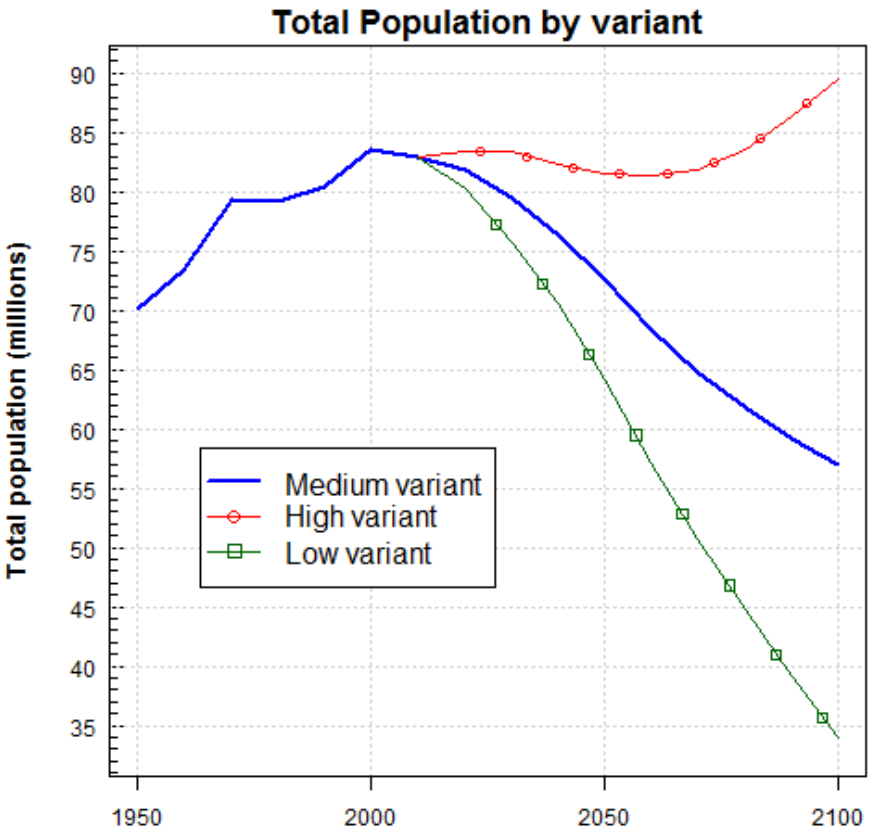

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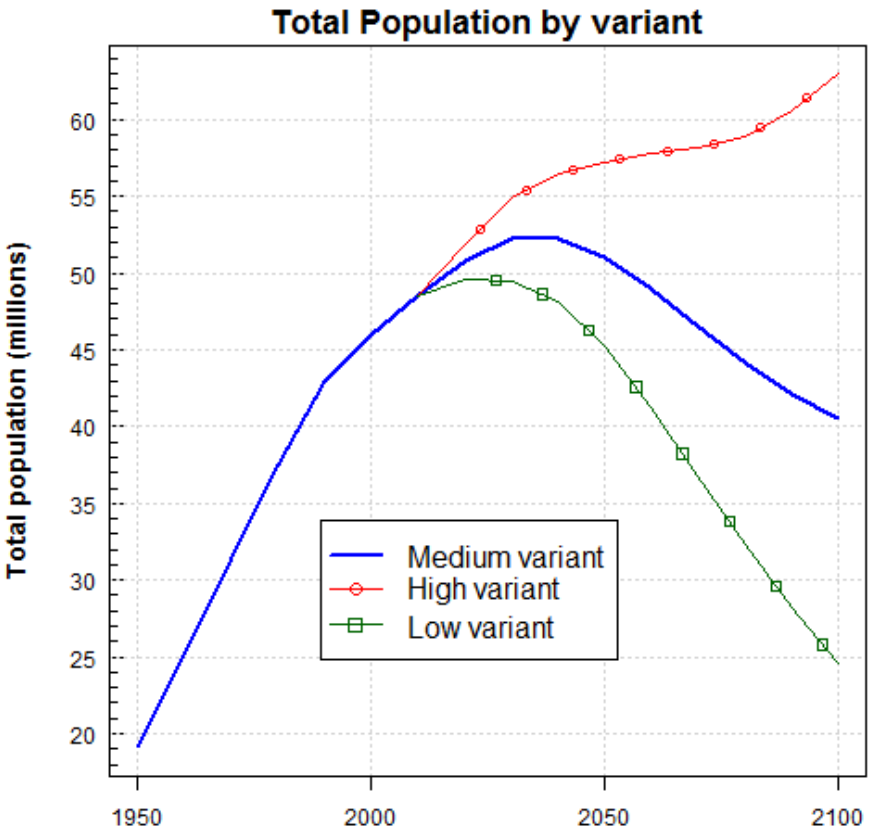

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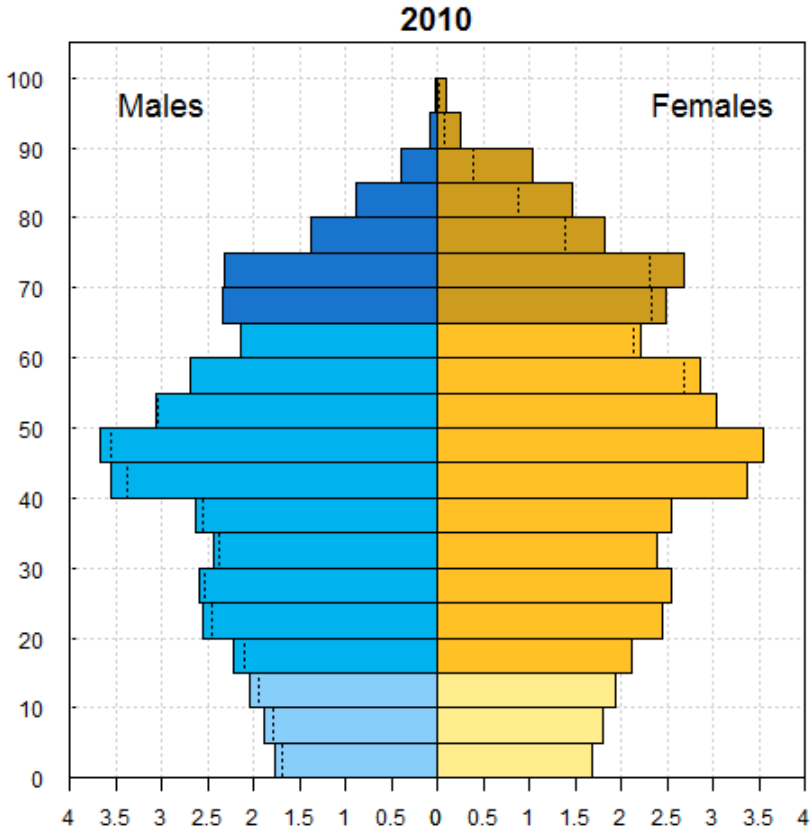

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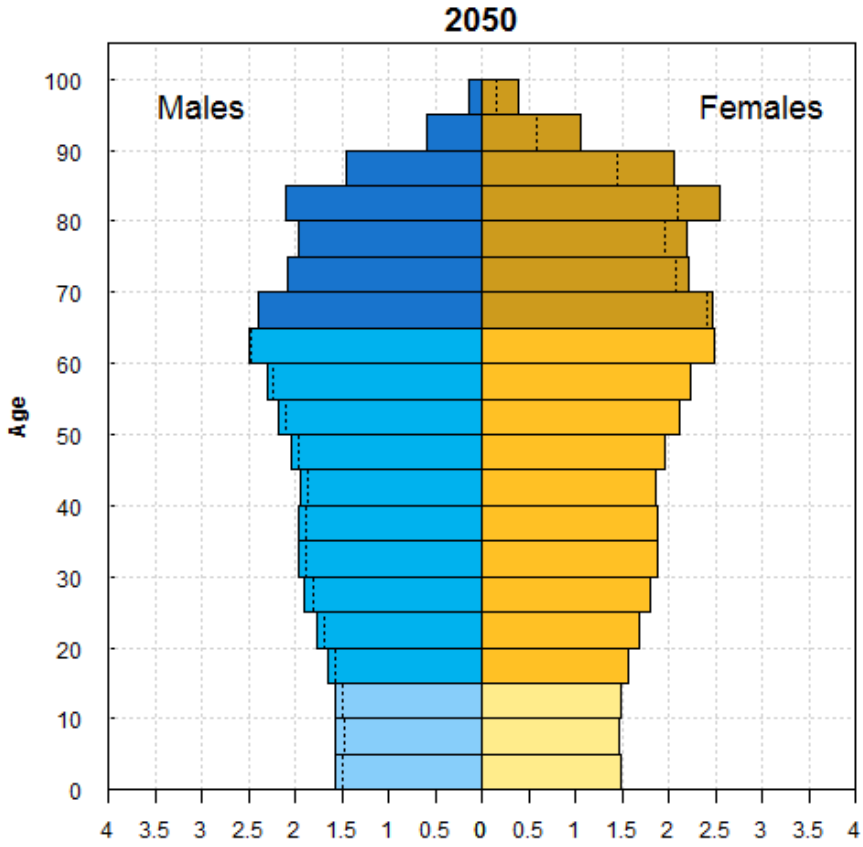

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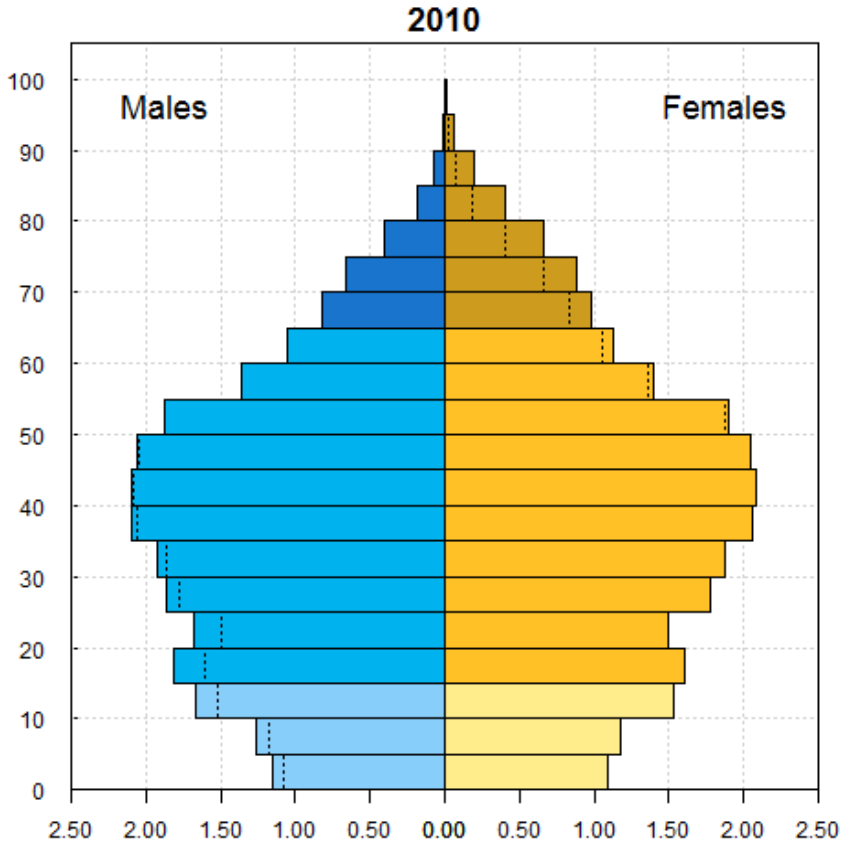

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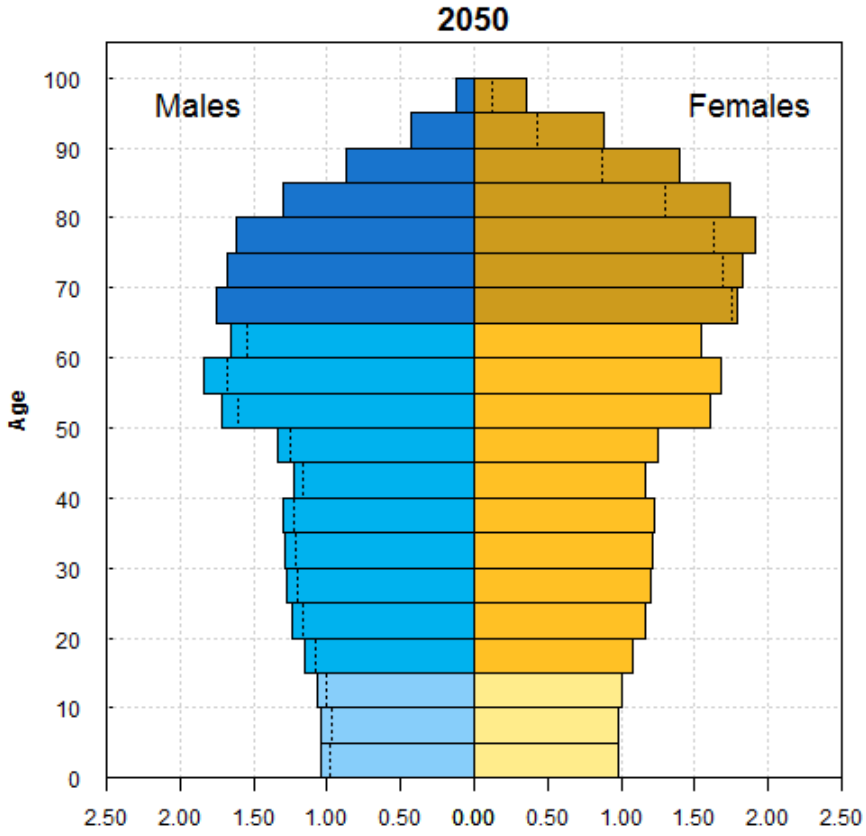

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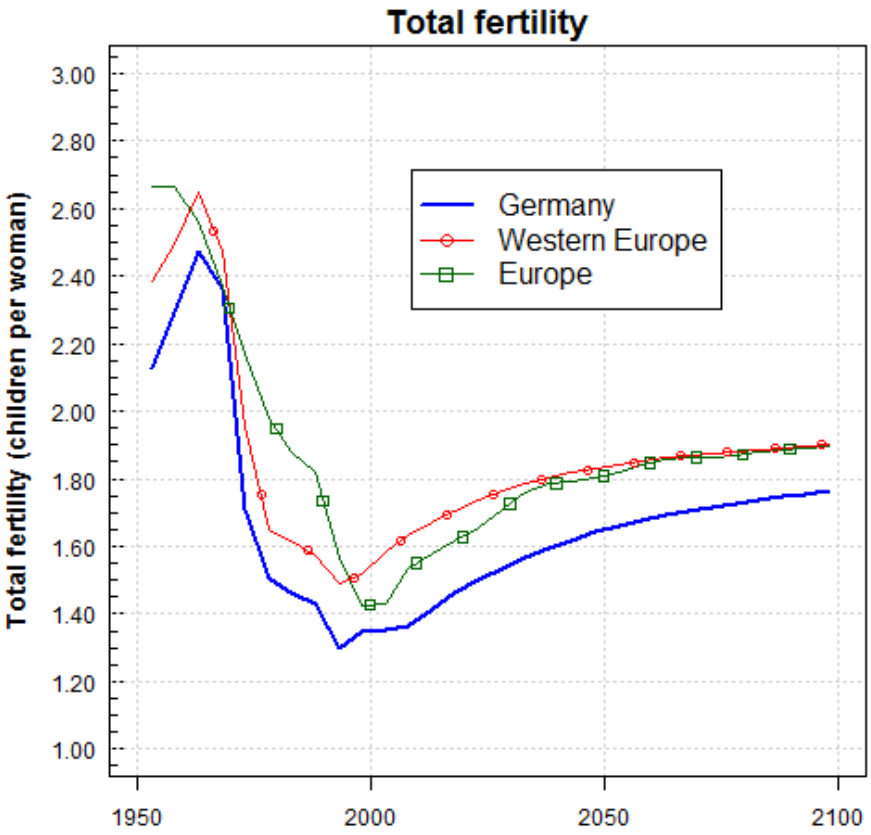

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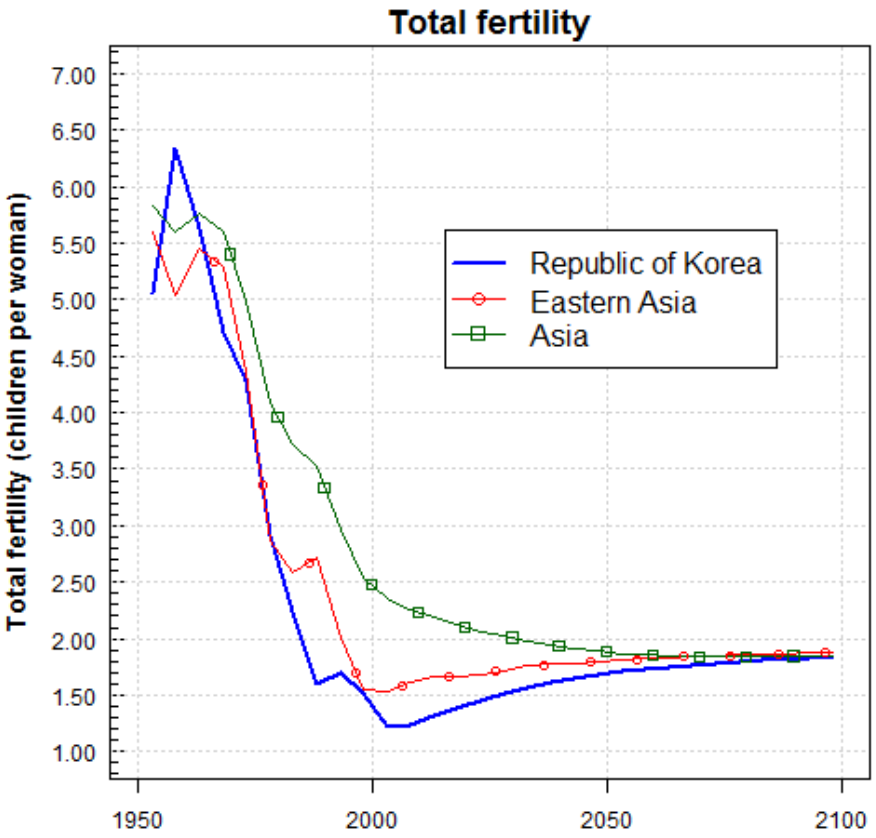

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Universität St.Gallen

Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

Population Ageing in China: What are the Present Demographic Predictions and how will they Influence the Chinese Economic Power in the Future?

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Manuela Disch
Kishore Durairaj
Pia Zimmermann

Handed in on the 1st of November 2014

EXECUTIVE SUMMARY

China's unprecedented economic growth and rise in economic power which was to a large extent fuelled by favourable demographics, raises questions whether the world's most populous country will continue to grow in the future, increasing its importance for the world economy. It is considered to be an aged society by 2027 which might infer great challenges on China's way to becoming a prosperous and powerful economy. In this paper we therefore had a look at the development of China's economic power based on predictions regarding its demographic development.

Based on the introduction of the one-child policy in 1979 China's fertility dropped drastically from 2.6 in 1980 to 1.6 in roughly 30 years (until 2012). An improvement in sanitation and health care standards and resulting a decrease in infant mortality spurred the evolution of a youth bulge that is currently moving through the working-age bracket, giving rise to an abundant labour pool and a phenomenon called the demographic dividend or demographic window. This is also due to the fact, that a drop in fertility occurred delayed in time which allowed this youth bulge to achieve a favourable position, facing a low youth-dependency burden at the same time as a low old-age burden. However this demographic window is predicted to last no longer than 2030. After that China will have become an aged society leading to an old-age population of 331 million people aged 65 and above in 2050. China's elderly will overtake today's population of the United States, the biggest developed economy in the world, by that time. Those 331 million elderly however only face 850 million working-age Chinese which will have to support them and cover their care needs. This burden arrives in a society which has considerably lower income levels than today's ageing, developed societies and which is lacking a robust social welfare system so far.

China will therefore experience increased pressure on its political regime and there is a serious potential for social unrest as we will explain in our PESTEL analysis in which we depict implications of China's rapid demographic transition on a political, legal, economic, technological, societal and environmental level. We further found that a shrinking labour force will threaten China's comparative advantage as low-cost labour destination for a great part of today's manufacturing industry and melt down its savings. With a focus on education, liberalization of labour and financial markets and a new mix of technology and labour within the manufacturing industries, China might be able to shift its labour force to higher-value adding and higher-income generating jobs, allowing for a release of pressure in political and social institutions. With China's government planning on doubling the economy's output until 2020 from 2011 onwards, one can rest assured that the government will take any step needed to achieve this goal. It remains to be seen to which extent social unrest, potential

political changes and new legislation, the impact of changes in the economic structure and increasing attractiveness of other low-labour cost destinations such as India or Mexico, will affect China's economic power in the end. Experts agree that China will most certainly continue to grow in the future but the days of double-digit growth might just be over and over the next decades other emerging countries will contribute much stronger to global economic growth than China, most certainly diluting its power to a certain extent. Nevertheless experts also agree that whereas China is experiencing rapid and drastic changes there is a lot at stake on a global scale. China will attain the status of a developed economy in 2030 mirroring its status as economic powerhouse and making us reconsider the way we think about the world order. Within our paper we tried to offer potential answers to the question how China's demographic transformation might impact its economic power, it has to be kept in mind though that whilst demographics are incredibly powerful in shaping economics and politics, their reaction in turn cannot be fully accurately foreseen.

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1. Introduction

"Demographic change shapes economic and political power like water shapes rock."

(Howe, Jackson, & Nakashima, 2011, p. 33)

China is one of the world's most powerful economies, contributing to global economic growth like no other country. Whilst representing almost 19% of the world total population, China is viewed as enormous potential market as well as important manufacturing hub. However, it is subject to a severe demographic transformation. As stated above by Howe, Jackson and Nakashima, changing demographics have the power to utterly reshape China's economic prospects and future political situation. This paper will thus discuss the impact of an ageing population in China with focus on its economic power.

China is predicted to be the world's most aged society in 2030, with its rapid population ageing mainly driven by three distinctive developments. First, the rapid economic growth and advancement of health standards over the past decades increased the average life expectancy. Second, the generation of baby boomers born between 1950 and 1960 starts to exit the working-age bracket. Third, the one-child policy, implemented in the 1980s resulted in an extremely low fertility rate. China's confrontation with a shrinking labour force in the future stands in stark contrast to its current economy being used to a highly available, abundant pool of labour at low cost which allowed China to establish a comparative advantage in low-cost and labour-intensive manufacturing. A shrinking labour force challenges the competitiveness with other low-cost production countries, such as Vietnam and India (Huang, 2013).

The question remains how and whether China will be able to keep up growing and holding on to its current economic importance. To make a solid forecast and to answer the questions the second chapter provides theoretical insights regarding the one child policy and the current situation of elderly people living in China. The third chapter shows empirical data, building the basis for a later analysis. Based on the PESTEL model, the political, economic, social, technological, environmental and legal issues will be discussed in chapter four. Furthermore, a comparison to Chinas greatest competitors of low production-cost countries is given in chapter five. The paper ends with final thoughts summarized in the conclusion.

2. China's development up until today

Of all the reasons why China faces the demographic challenge so soon, the most significant is the implementation of the one-child policy in 1979, aimed to alleviate the socio-economic problems of the country. The policy has in recent decades become unpopular, increased the risk of significant reduction in labour pool and exacerbated elderly care and social security issues (Chang, 2013). Any growing economy on its way to an industrialized

economy undergoes a change in its demography according to the demographic transition theory. As per capita income and literacy level increase, the participation of women in the labour force increases, resulting in the postponement of child bearing age, leading to a drop in fertility rates. Additionally as fertility rates decrease, the dependency ratio, the number of people who are dependent on an earning member, increases (Dudely, 1996).

The immediate impact of China's one-child policy was falling birth and fertility rates. Since the implementation, China's birth rates have dropped from 18.2 births per 1,000 people in 1980 to 11.6 births per 1,000 in 2012. Fertility rates fell from 2.6 children born per female in 1980 to 1.6 births per female in 2012 (Euromonitor, 2014). The country's population has been rising at slowing pace. Experts estimate that the one-child policy prevented between 300 million and 450 million births (China People's Daily, 2011; Goldman Sachs Global Economics Group, 2007). However, the policy has also brought to reality some unintended social consequences such as forced sterilizations by the state, high female abortion rates due to a strong preference for a male offspring thus a skewed sex ratio. China ranks the highest in terms of the number of births of male children per 100 female children. The skewed sex ratio has further exacerbated fertility being already lower than replacement rate (Euromonitor, 2014).

All of this will result in a shrinking work force and labour shortages over the coming decades. According to the demographic transition theory, the fall in fertility rates and a shrinking working age population are the final stage in the transition to an industrial economy, which is preceded by rising per capita income (Dudely, 1996). But in China's case, things have happened before the per capita income could increase to sustainable levels. China's one-child policy means that the population's proportion aged 65+ will rise sharply in the next decade. This will create significant costs, questioning the government's ability to foster sustainable growth.

2.1. Demographic transition as driver of China's economic development

Ever since the Chinese economy was opened up in 1979 it has grown rapidly pulling 680 million people out of poverty (Economist, 2013). The past three decades have been the only long period in the history of China without civil war or famine. This accelerated economic progress of China can be directly traced to the availability of a cheap abundant labour force, allowing companies to set and scale up their manufacturing operations (KPMG, 2013). Foreign investments surged resulting in an accelerated improvement in country's infrastructure. At the same time, the Chinese economic growth faces considerable challenges from a rapidly shifting society – an ageing society.

As the Chinese population swelled by the late 1970s and healthcare improved, a consequent development was a fall in the infant mortality rate, increasing the number of children who survived at birth and during childhood (Burgi, Carlson, & Wilson, 2011). The realization that more children are surviving and smaller family sizes are preferable came late to parents, giving rise to a temporary youth "bulge" (Burgi, Carlson, & Wilson, 2011). Additionally, by the time parents realized, the one-child policy was in place. The youth bulge is currently passing through the working age stage creating China's abundant labour pool (Burgi, Carlson, & Wilson, 2011). At the same time, it is accompanied by smaller youth population following them, hence a smaller youth-dependency burden and a small old-age population ahead of them, thus an advantageous old-age dependency ratio (Burgi, Carlson, & Wilson, 2011; Howe, Jackson, & Nakashima, 2011). This phenomenon is called the demographic dividend or demographic window and boosts economic growth for about 30 to 40 years before turning into a significant headwind (Burgi, Carlson, & Wilson, 2011; Howe, Jackson, & Nakashima, 2011; Goldman Sachs Global Economics Group, 2007). The fact that the demographic dividend will finally lean against economic growth resides in an increasing dependency burden when the former youth and labour bulge progresses into a bulge of elderly needing care and support instead of contributing labour and savings to the society and economy (Burgi, Carlson, & Wilson, 2011; Howe, Jackson, & Nakashima, 2011; Goldman Sachs Global Economics Group, 2007). This demographic transition resulting from China's economic and social development is reinforced by the one-child policy. It seems to be irreversible according to experts (Howe, Jackson, & Nakashima, 2011).

3. China's demographic outlook

When considering a fertility rate of 1.63 today in China (United Nations, Department of Economic and Social Affairs, 2014a) lying below the 2.1 required replacement rate needed to maintain a stable population (Howe, Jackson, & Nakashima, 2011), one might very well wonder where today's most populous nation is heading. China's population growth is slowing (Population Reference Bureau, 2010) and as experts agree will start ageing rapidly in the near future, with a total declining population from 2030 onwards (United Nations, Department of Economic and Social Affairs, 2014b). India will push China from its rank as most populous nation in the world as soon as 2021 as demographers predict (Burgi, Carlson, & Wilson, 2011) and China's population growth will have slowed from 2.01% annually from 1950-78 to only 0.65% annually since 2005 (Goldman Sachs Global Economics Group, 2007). So how will China look like in 2030? In the following chapter we will shed light onto this question and depict the country's projected demographic development.

The above described low fertility rate of 1.63 total children per Chinese woman (United Nations, Department of Economic and Social Affairs, 2014a) is paired with an

increasing life expectancy (74.4 years in 2005-2010 (United Nations, Department of Economic and Social Affairs, 2014a)) due to China's continuous improvement of living and health care standards (Population Reference Bureau, 2010). A table of the projected development of remaining life expectancy at 60 years for the period from 1980 until 2050 (portrayed in Appendix 1) shows that elderly will live longer over time. Hence, a considerable increase in the proportion of elderly to China's population during the past two decades (Population Reference Bureau, 2010) could be observed and will continue in the future. The United Nations predict a steep increase of 15.7 percentage points in the proportion of Chinese citizens aged 60 years and older within the next 30-year period (United Nations, 2013). This increase is evaluated as the fastest in the world and will lift the share of 60+ citizens from 12.4% to 28.1% until 2040 (United Nations, 2013). Facing such a notable growth in the 60+ segment, China's median age is projected to attain 50 years or higher by 2050 (United Nations, 2013) coming from around 35 years in 2013 compared to 22 years in 1980 (United Nations, Department of Economic and Social Affairs, 2014b). China's population pyramid will shift from a clear pyramid towards an urn shape implying that the Chinese population will be over-weighted at the top due to ageing and underweighted at the bottom due to low fertility (Goldman Sachs Global Economics Group, 2007) (graphs showing the development of China's demographics from 1950 until 2100 can be found in Appendix 2).

At the same time as the share of elderly in absolute as well as relative terms is increasing rapidly, the portion of young and working-age adult Chinese to follow is decreasing (Goldman Sachs Global Economics Group, 2007). The World Bank estimates the Chinese workforce to decline from 2015 onwards (The World Bank and Development Research Center of the State Council, P.R. China, 2013) whereas experts at McKinsey already saw China passing this turning point in 2012 (Dobbs, Ramaswamy, Stephenson, & Viguerie, 2014). A graph showing the change in total and working age population in China, which equals a decrease of 83 million people, compared to India (a surplus of 424 million) from 2010 until 2050 can be found in the appendix (compare Appendix 3). This severe transformation of China's population composition can be seen in Figure 1 which drastically shows that whilst the population itself in 2050 is nearly of the same size as in 2013, the share of elderly (aged 65 and above) will have considerably grown and the labour force (age group 15-64) shrunk. While there were 122 million people aged 65 and above in the China of 2013 there will be 331 million people aged 65 and above in 2050 (United Nations, Department of Economic and Social Affairs, 2014b). This age segment would then be bigger than today's entire population of the United States with 316 million inhabitants.

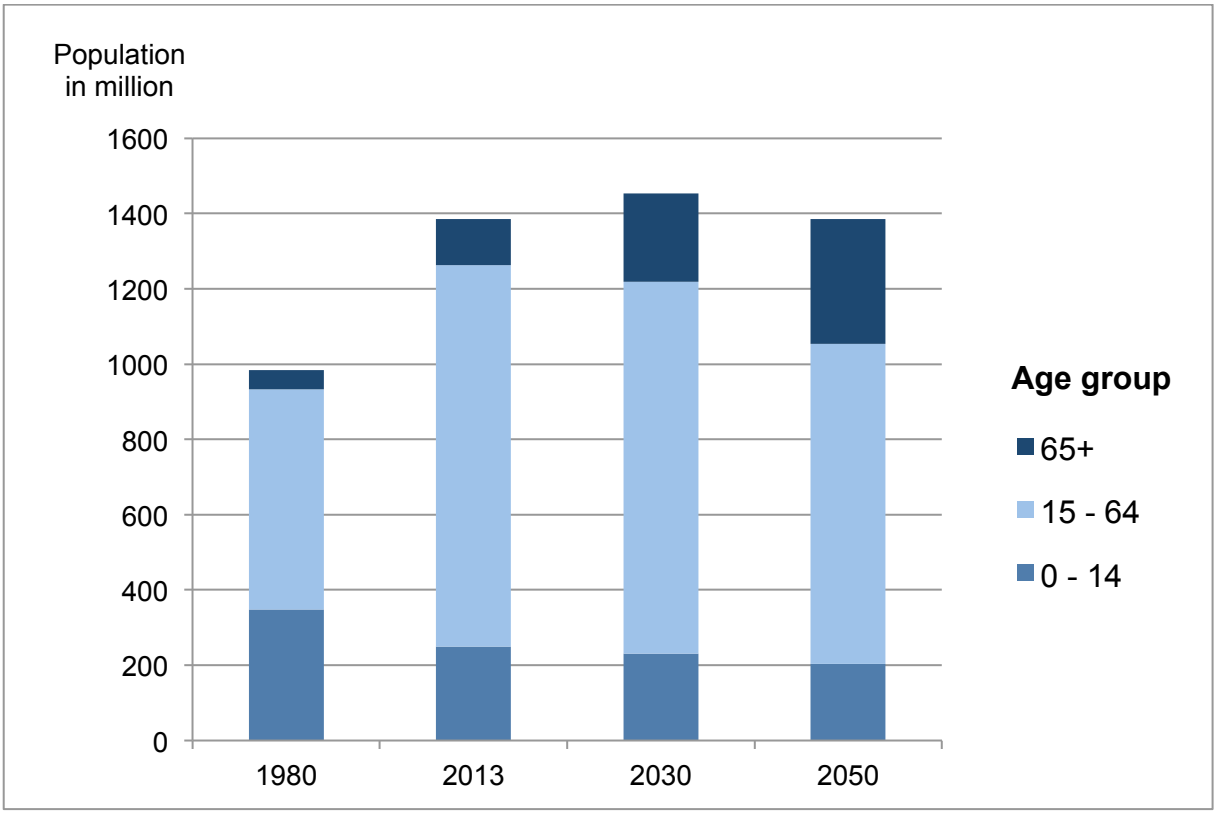

Figure 30: Development of the Chinese population according to age groups in absolute terms

Source: United Nations, Department of Economic and Social Affairs, 2014b

With a decreasing working-age population yet increasing old-age segment, China will experience a considerable increase in the dependency ratio. Whilst today the old-age dependency ratio (dependency per 100 working-age persons) lies around 12.1 it will more than triple reaching 39.0 in 2050 as predicted by the United Nations Department of Economic and Social Affairs (2014b). When adding the child-dependency ratio, the burden will increase from 36.8 in 2013 to 63.0 in 2050 (United Nations, Department of Economic and Social Affairs, 2014b). On the way to 2050 China will pass the current level of old-age dependency ratio in Norway and the Netherlands by 2030 (which is respectively 22 and 23) (The World Bank and Development Research Center of the State Council, P.R. China, 2013). Looking purely at China's development of the old-age support ratio this trend translates into a decrease from 8.2 working-age adults support per older person in 2013 to 2.6 in 2050 (United Nations, Department of Economic and Social Affairs, 2014b). This means that whilst nowadays 8.2 working-age Chinese share the burden of supporting one elderly there will only be 2.6 working-age Chinese left to do the same job in 2050 (and 3.8 in 2030 (Howe, Jackson, & Nakashima, 2011)). According to experts this burden will appear in terms of higher tax rates and public debt on the one hand and higher financial support granted by Chinese family networks on the other (Howe, Jackson, & Nakashima, 2011).

Overall we see that China will be exiting its phase of demographic dividend or demographic window and entering a new stage of population development which is rather similar to developed economies such as Germany, Italy and Japan (International Monetary Fund, 2014). However, China will be considerably poorer at this time compared to its developed ageing counterparts. China will have grown to a developed country in 2027 yet with a relatively low per capita income of 11,000 USD compared to well above 35,000 USD per capita in the US and Japan (Goldman Sachs Global Economics Group, 2007). Its old-age burden will rise and has the potential to create substantial challenges and problems in the future which we will now have a closer look at in the following sections.

4. PESTEL-Analysis of China's demography in 2030

Which impact an ageing society will have on an emerging economy, is much less understood yet can be much more varied compared to its impact on a developed economy (Howe, Jackson, & Nakashima, 2011). In the case of China this is a particularly pressing concern as the country represents on the one hand the fastest ageing emerging economy (Goldman Sachs Global Economics Group, 2007) and on the other hand the one which has risen to a powerhouse with the greatest potential impact on the world economy (Howe, Jackson, & Nakashima, 2011). To gain a better understanding of the challenges and opportunities China will face due to its rapid ageing process, we will employ a PESTEL analysis in the following (a graph visualizing the PESTEL-framework can be found in the appendix, compare Appendix 4). The PESTEL analysis allows us to take a 360° perspective on China and identify potential political, legal, economical, technological, social and environmental implications of its demographic change. In the end, when looking at all six aspects and their interdependencies, it will allow us to discuss the question whether China's population ageing will inevitably lead to a loss of economic power or whether the country will be able to manage this drastic transition without severely affecting its shift towards a developed nation.

4.1. Implications for politics

China has achieved strong growth since the market reforms of 1978 by Den Xiaoping. While there was a lot of scepticism from the west about the political future of non-democratic countries, China has proven that a state controlled economy is able to pull a country out of slow economic growth towards a path of prosperity (Li, 2012). There still linger questions of freedom of speech, religion and practice, but one thing that remains undisputed is the fact that the Chinese model of development has managed to pull 800 million people out of abject poverty and it continues to do so today (World Bank, 2014).

The Chinese Communist Party since 1949's revolution led by Mao Zedong has been at the helm of things in China, closely controlling policies and people. The 1989 Tiananmen Square incident and the collapse of the Soviet Union have made scholars think about the imminent collapse of authoritarian governments around the world (Li, 2012). Many dire predictions of imminent collapse have come and gone but the party has resisted and even thrived, especially since it opened its country to controlled capitalism. The Lipset's theory of modernisation of a non-industrial economy postulates that as an economy progresses and income rises, the country moves towards a path of democratisation (Wucherpfennig, 2009). The creation of a large middle class accelerates the process. In addition, a high level of inequality coupled with high levels of corruption can add to the impetus for change. But can the political model, which allowed China unabated success in the last 30 years, continue to work towards China's success? As the economy shows signs of sluggishness and as the growing middle class discontent over corruption and state control, scholars around the world and even in China think about the future of the political system, seen as the enabler of China's economic progress (Li, 2012).

Fukuyama, a senior fellow at Stanford University, is of the opinion that China will gradually fall into the same path as most other countries through process of gradual liberalization that culminates into a full democracy. He adds that if the process is not delayed, popular uprisings as seen in the Arab Spring might occur in China. "China's political model is just not sustainable because of the rising middle class – the same force that has driven democracy everywhere," he says. "The new generation in China is very different from the one that left the land and drove the first wave of industrialisation – they're much better educated and much richer and they have new demands, demands like clean air, clean water, safe food and other issues that can't just be solved by fast economic growth." (Anderlini, 2013)

In addition, the advent and the penetration of internet among Chinese masses in the past decade will play a significant role and stimulus for people movements to spring up across the country questioning authority. While the government has taken every possible step to curb Internet activism (for example through blocking networking sites and a rigid censorship regime), it will be increasingly difficult in the future as Chinese people find ways to bypass the restrictions (Hvistendahl, 2014). Many domestic alternatives to popular social media services have sprung up that allow people to bypass the restrictions on freedom of speech which was one inconceivable only a few years earlier.

From a political standpoint, the slowing economy and middle class discontent with the country's leadership, combined with growing inequality is a recipe for a crisis akin to the Arab Spring, which may eventually lead to a fully blown disaster. But the current leadership under Xi Jingping is fully aware of the people's (dis)sentiment and its recent crackdown on

corruption and expensive gifts is a welcome change (The Economist, 2014). As long as the government keeps up with the people's aspirations and is willing to change its policies and governance style as needed to be, the political element will not be an impediment to the country's progress but will continue to be an enabler.

From a demographic standpoint, the Chinese government has to take into account the ageing population and subsequently the institutions that will be required to support it, while drafting its five-year plans. State pension systems and healthcare systems are poorly developed and the focus should be to ramp up investment in these institutions to meet the future demographic challenges. As such, diverting the country's savings towards building institutions will bound to have a negative effect on the country's economic growth in the coming decades.

4.2. Implications for China's legal framework

It is widely known and an accepted fact that anything in China is within the reach of the government to restrict or change through state laws. The one-child policy is a perfect example wherein the government got involved in the private affairs of family planning.

While anything goes in China, the government is not ignorant about the looming demographic crisis that will affect its competitiveness. The government recently announced a revision of the one-child policy, relaxing certain conditions (Holiday, 2013). But there is a widespread consensus among scholars that this change might not bring in the intended effects in the near future, at least in the next decade. Generations of Chinese have grown with the mentality that one child is the right number. Furthermore rising living costs in cities, where the majority of Chinese live, dampens the idea of having a second child for most couples (Larson, 2014). If the policy were to succeed, the government should incentivise the couples through state sponsorships for new-borns education and welfare.

Another significant law that was implemented in China recently in 2013 was the "aged-care law". Elderly parents in China can now sue their grown children for both financial and emotional support (BBC, 2012). The changes in the law in China reflect the government's attempt to change an increasingly shift in attitude towards family and caring China. It is also an attempt to ease the government's responsibility to care for the rapidly ageing population in the country through pensions and elderly healthcare. As noted above with the one-child policy, while everything is within the reach of the government, instead of policing its citizens on caring for the dependents, the government should create social safety nets and strengthen the infrastructure – by changing pension laws, and healthcare security – and as some demand liberalize capital markets to better cope with the inevitable change rather than forcing further on an already burdened Chinese citizen. The Chinese Communist Party government has the necessary power to avert a full-blown demographic crisis. The

government should realize that it has a responsibility to care for the elderly by creating necessary institutions and implementing new laws. The government's one-child policy is the reason why the Chinese society aged rapidly in such a short span of time.

4.3. Implications for China's economy

Many experts agree that China's days of double-digit growth rates are over and that the country enters a new phase in its development, with slowing growth rates (The World Bank and Development Research Center of the State Council, P.R. China, 2013; Liu, 2011; Cheng, Li, & Woetzel, 2012) partly due to its ageing society and the closing of the demographic dividend or window as it is called (Howe, Jackson, & Nakashima, 2011; Goldman Sachs Global Economics Group, 2007). Over the past decades it became clear that China is able to harness its demographic window (Burgi, Carlson, & Wilson, 2011) but will it also be able to grow in times of demographic shift?

China enjoyed decades of fast growth and favourable demographics thanks to the experience of the demographic window as explained in chapter 2 (Howe, Jackson, & Nakashima, 2011). Yet this demographic tailwind will turn into a "significant headwind" for the economy during the following decades according to analysts (Goldman Sachs Global Economics Group, 2007). China's economic boom has been fuelled by an ever-increasing pool of labour as a result of a) within-country labour-migration from agricultural, rural areas to industrialized cities (in particular coastal cities) (Cheng, Li, & Woetzel, 2012) and b) a typical time-lag between a drop in child and infant-mortality and a consequential drop in fertility (Goldman Sachs Global Economics Group, 2007). When looking at the time-lag between mortality and fertility decrease, experts identified this factor as reason for a temporary population "bulge" (Goldman Sachs Global Economics Group, 2007) which boosts the labour-force as progressing through the population pyramid. This bulge is expected to exit the labour force over the next decades making China an aged society by 2027 (Goldman Sachs Global Economics Group, 2007) (a graph showing the time frame of China's demographic dividend compared to other countries and regions can be found in the appendix, compare Appendix 5). From then onwards China will face an increase in the dependency burden leaning against economic development (Howe, Jackson, & Nakashima, 2011) (a development of the dependency burden split into old-age and child-dependency can be found in the appendix, compare Appendix 6) at the same time as it is confronted with a decrease in labour-supply for its low-skilled manufacturing jobs which have been the country's major comparative advantage enforcing its industrial-based economic success (Howe, Jackson, & Nakashima, 2011). Less labour entails rising costs per labour unit (Population Reference Bureau, 2010) which lead labour-intensive industries to leave the country and move to lower-cost destinations leaving less low-skilled jobs for China and its

economic growth (Goldman Sachs Global Economics Group, 2007; Cheng, Li, & Woetzel, 2012). Part of this decline in the availability of labour can be mitigated by releasing further surplus labour from the agricultural sector which according to macroeconomic analysts can serve as a source of continued growth even without negatively affecting agricultural output as efficiency gains in this sector are expected (Goldman Sachs Global Economics Group, 2007). The World Bank though argues that not all of China's economic slow-down can be buffered by this measure as the bulk of possible migration has already occurred (The World Bank and Development Research Center of the State Council, P.R. China, 2013). There is no consensus to which extent changes in this migration flow will influence the Chinese economy. Experts at McKinsey argue this shift has contributed significantly to economic growth in the past and is a strong driver thereof (Barton, et al., 2012) whereas experts at Goldman Sachs take on a contraposition claiming a decline in this flow will only have a small impact (Goldman Sachs Global Economics Group, 2007). A graph showing the sources of China's economic growth can be found in the appendix (compare Appendix 7). To foster further migration a revision of the household-registration policy (so called hakou system) should be considered since this might serve as crucial facilitator thereof (Goldman Sachs Global Economics Group, 2007). A new mix of capital and labour could be another measure to satisfy the labour needs of the manufacturing sector whilst freeing labour force for higher-value- adding jobs (Goldman Sachs Global Economics Group, 2007). Overall experts demand labour market liberalization to ensure that available resources can be allocated efficiently (Goldman Sachs Global Economics Group, 2007; The World Bank and Development Research Center of the State Council, P.R. China, 2013).

Following labour markets, experts also demand for the liberalization of capital markets, as in the future China will see a strong trend towards replacing labour with capital and necessary infrastructure investments requiring an increase in investment (Goldman Sachs Global Economics Group, 2007). Additionally, a liberalization of capital markets would enable private households to build up saving, accumulate and preserve wealth, thus to prepare for the old-age, decreasing the financial burden for the following generations (Goldman Sachs Global Economics Group, 2007). According to experts at Goldman Sachs this would be the most efficient way to ensure care of the elderly, in particular when keeping in mind that China's age wave will arrive in a less affluent country and at a very short time, leaving only little room to prepare for the fiscal burdens of a welfare-systems let alone setting up such a system (Howe, Jackson, & Nakashima, 2011). Furthermore, the capital market liberalization would boost the financial services sector, contribute to overall growth and create new employment opportunities besides allowing for an efficient resource allocation (Goldman Sachs Global Economics Group, 2007).

Moreover, as the country progresses, it shifts from a resource-intensive manufacturing-based economy towards a more developed economical pattern with increasing importance of innovation, private consumption, advanced industries and the services sector by 2030 (Cheng, Li, & Woetzel, 2012). In 2030 services could make up to 53% of China's GDP compare to 42% contributed by the industrial sector (Cheng, Li, & Woetzel, 2012) marking a clear structural change. This advancement in China's economic development means industries move up the value-added chain (Howe, Jackson, & Nakashima, 2011), offering higher income generation and requiring new employee skill sets (Cheng, Li, & Woetzel, 2012). Partially the country will experience a mismatch between a poorly skilled rural workforce and more demanding job profiles (Howe, Jackson, & Nakashima, 2011) but at the same time due to its one-child policy China was able to increase its expenditure on education (private as well as public) and achieve a strong accumulation of human capital which should support the growth of quality-adjusted labour (Goldman Sachs Global Economics Group, 2007; The World Bank and Development Research Center of the State Council, P.R. China, 2013). Already during the past thirty years 15% of China's economic growth was based on human capital accumulation compared to a 13% contribution share of labour force growth (Goldman Sachs Global Economics Group, 2007). This clearly shows the potential which human capital accumulation offers to China when it comes to fighting the threats of an ageing population. It is expected that over the following two decades China could produce 200 million college graduates, which marks a number greater than the entire US work force (The World Bank and Development Research Center of the State Council, P.R. China, 2013). Due to the country's transition from labour-intensive towards skill-intensive economy productivity will increase, innovation and private consumption (due to rising household income) will play key roles in driving China's economy and overall the country will be able to follow a path of sustainable growth, emphasizing domestic growth drivers and creating new areas of comparative advantage (The World Bank and Development Research Center of the State Council, P.R. China, 2013; Cheng, Li, & Woetzel, 2012).

Due to its ageing and advancing society China's economy will further experience changes in consumption patterns (Goldman Sachs Global Economics Group, 2007). This will boost different industries such as nursing services, health care sector and pharmaceuticals, the insurance sector, biotech and health foods solely due to a growing elderly segment (Goldman Sachs Global Economics Group, 2007). Consumption patterns will shift due to a better-educated workforce and newly emerging, strong middle-class which will demand more sophisticated products thereby providing opportunities for Western multinationals but also for local Chinese competitors and entrepreneurs which in turn nurture China's economy (Goldman Sachs Global Economics Group, 2007).

To conclude, China will see a slow-down in tis economic development due to ageing but its economy will experience a structural shift, moving up the value-chain and providing new sources for higher income. Experts agree that China will attain the status of a developed nation by 2030 with a per capita income of 11,000 USD which nevertheless will remain considerable lower than income in the US or Japan (Goldman Sachs Global Economics Group, 2007).

4.4. Implications for China's technology level development

With education being a major solution to economic growth under the pressure of an ageing society with declining investment rates in 2030 (The World Bank and Development Research Center of the State Council, P.R. China, 2013), China will likely see an improved innovation environment and a consequential increase of its technology level. Even though a greying workforce will depict lower levels of innovativeness (Howe, Jackson, & Nakashima, 2011) China is likely to economically outperform developed markets based on its potential for technological catch-up (The World Bank and Development Research Center of the State Council, P.R. China, 2013).

China managed to increase its quality of education, spending on education on a per-child basis (private and public) due to a decreasing number of children and as result the supply of science and engineering skills (The World Bank and Development Research Center of the State Council, P.R. China, 2013). This accumulation of human capital could enable China to realize significant increases in total factor productivity growth (TFP) based on its innovation capabilities (The World Bank and Development Research Center of the State Council, P.R. China, 2013). According to the World Bank this would allow China to achieve its growth targets and achieve rapid yet sustainable growth.

Nevertheless, China faces challenges on its way to unlocking this potential. So far experts observed that China's innovation centres have been mainly state-owned and bringing up only few commercializable innovations, even fewer that actually were brought to the markets making its innovation efforts fairly irrelevant for its technological and economic development (The World Bank and Development Research Center of the State Council, P.R. China, 2013). The World Bank names lacking infrastructure and governmental support as part of the problem and demands the improvement of institutional arrangements, which would allow broad-based innovation. Some of these measures could include the easing of firm entry and exit, increasing competition, enforcing intellectual property laws and improving tertiary education (The World Bank and Development Research Center of the State Council, P.R. China, 2013).

Even though China is already on a good way to catch up technologically and move up the technological frontier as a measure of escaping growth slow-downs due to ageing, it still faces a need to improve policies and regulations that stimulate innovation.

4.5. Social implications

China is predicted to be the most aged society by 2030 resulting in a significant increase in the dependency ratio as described in chapters 2 and 3. Not only ageing but also the standard of living, income and education level is increasing amongst Chinese.

Urbanisation is another big topic regarding social challenges. The government plans to move 70 to 75% of China's population to cities between 2000 and 2030 (Xu, 2014). If we look at the current agricultural sector in China, which is assumed to be inefficient, as about 27% of the agricultural workforce, which is approximately 128mn people, is surplus. However, the migration of young people from rural to urban areas is steadily continuing and happens most likely at an age of 15-29 years. According to the growth model of Goldman Sachs Global Economics Group (2007) 27mn surplus workers will exit the agricultural sector by 2050. Furthermore, it is predicted that the remaining workers in this sector will increase their work efficiency to compensate for those who left, leaving China's agricultural output unchanged. Nevertheless, it is important for China's future demographic challenges to provide better education opportunities to youngsters living in rural areas, so that they are equipped with a more valuable skill-set when migrating to urban areas and are able to take more permanent positions in high-value-added industries. China must therefore take the necessary steps in education and the labour market to ease the demographic constrains of an ageing society. Moreover, China has to increase expenditure on education to distribute it more evenly. With the gains of a better-educated workforce and continuous urbanisation China's economy should be able to grow despite of its ageing population and the slowing labour force growth (Goldman Sachs Global Economics Group, 2007). Furthermore as higher-value added industries typically offer higher-income generating jobs than simple manufacturing tasks, this might represent a financial buffer for elderly-care.

After all, through to the rapid transformation of the country, China is confronted with weakening family ties, partially residing in the dilution of traditions as a result of economic and social advancement. Among China's elderly people (65+) almost one in four is living below the poverty line, one in three struggles with daily life activities and about 40% show strong symptoms of depression. As mentioned in chapter 2, the Chinese government implemented therefore a law that allows parents to sue their children if they don't support them emotionally and financially (Denyer, 2013). Also, the rural-to-urban migration puts additional pressure on China's social institutions. Especially elderlies living in rural areas are more likely to be poor, not only because of a lower pension, but also because of a

decreasing number of children living with their elderly and caring for them. Whereas about 70% of rural elderly lived with their adult children in 1990, the number fell to 40% by 2006 (The World Bank, 2013). Experts demand thus also a liberalization of capital markets in turn to allow private households to build up and preserve wealth that will support them during their old-age as described in chapter 4.3 (Howe, Jackson, & Nakashima, 2011; Goldman Sachs Global Economics Group, 2007). This again shows us how interwoven the topics of economic implications, social and political or legal aspects are.

Recently, China is confronted with frequent strikes and social unrest. The Chinese society is asking for better work conditions, higher wages and cleaner environment through less air pollution. Despite of the usually strong-armed private or state owned companies by officials to buying off strikers, it gets easier for protesters to convey instant reports and images to huge audiences through to the home-grown copycat versions of Twitter or other social media tools (Cheng, Li, & Woetzel, 2012). Social unrest can lead to developments akin to the Arab spring as described in chapter 4.1 on political implications of demographic change which means a political destabilization. The political environment and stability of a country at the same time though exerts a major influence on its business and economic environment, from which we can see that social unrest due to demographic change might affect China's economic prospects even more negatively. At the same time when discussing environmental pollution as a further cause of strikes and dissatisfaction among the Chinese population, we also see that China's environmental development until 2030 or 2050 will play a crucial role which we will discuss in the following chapter.

4.6. Environmental implications

China's impact on the climate is unique and it is doing more damage to the stability of the worldwide climate than any other country. The fast growing economy is resource-hungry. In 1990 China's greenhouse-gas emissions were about 10% of the world's total. Today they rose to over 30% (Goldman Sachs Global Economics Group, 2007). In other words, since the turn of the century China alone has accounted for two-third of the global growth in carbon-dioxide emissions and it is still increasing, which makes it a unique global threat (The Economist, 2010). The impacts are also severe within the country as most of Chinas rivers are filthy, the soil contaminated and its wildlife is under a massive threat caused by expansive industrial development. Furthermore, the quality of standard of living and also the life expectancy in some regions are decreasing caused by air pollution (Xu, 2014). As a result China is not only confronted with a greying but also with an ill workforce, unable to deliver the performance and potential the country holds.

Under the pattern of growing first and cleaning up later, the government implemented a series of reforms in the past and present to clean things up, which should not be

undervalued. Ambitious environmental initiatives are addressed in five-year plans to reach an extensive list of objectives by 2020. Since the beginning of 2014 the central government has required 15.000 companies, including large state-owned, to publish real-time figures on their air emission and water discharges (Xu, 2014). Moreover, huge investments were done in hydroelectric programs as well as in wind and solar power. The government aims to get 20% of its needed energy satisfied by renewable energy until 2020. To reach this goal China invested over 67 billion USD only in 2012. But most of the production of clean energy is currently inefficient. The US for example has almost the same wind power capacity as China, but gets 40% more energy out of it. Despite China's effort in using renewable energy, its current needs are mostly satisfied from burning fossil fuel. China burns half of the world's supply, surpassed the US in 2006 and is the world's largest oil importer worldwide. However, around 25% of China's greenhouse gas emissions are produced making goods for export (The Economist, 2010).

As argued previously, China has to build its economy on innovation rather than on low-cost worker, which is more likely due to a higher educated workforce. Especially innovations in the field of renewable energy would provide an opportunity for China's future economic growth and create a competitive advantage (Goldman Sachs Global Economics Group, 2007). Furthermore, it is crucial for China's future existence to decrease its oil-dependency, as oil is a scarce resource whose price is predicted to increase drastically (The Economist, 2010). Moreover, China needs to further improve its political reforms to catalyse any real change in the environmental sphere. If China manages to take the full potential out of the production of renewable energy and to replace fossil fuel more efficiently the environment will benefit from less carbon-dioxide emissions in the atmosphere. One can hope that the world largest air polluter will be able to do the turn to become the world's biggest innovator in renewable energy production.

Hence when looking at all elements of the PESTEL analysis we see that there are many impediments and challenges to further economic prosperity and political strength for China. It is therefore questionable whether China will be able to maintain its economic power on global level. However we have also seen that there are many options which can mitigate part of these risks, such as a better educated workforce and higher-value adding jobs, a new mix of capital and labour, legislation that allows for greater employee mobility, liberalization of financial markets that allows for private wealth creation and that releases pressure from political institutions. Keeping in mind that China is not yet a fully democratic country and that the governing party targets a duplication of economic output until 2020 (according to its last Five-Year-Plan from 2011) one can rest assured that it will undertake any measure necessary to achieve this goal (Amann, 2014). Experts predict that by 2030 China will be a

developed country therefore most certainly challenging our view on its economic power status, the order of the world and mirroring China's growing economic importance.

5. China's economic development in a global context

Chinese manufacturing currently contributes close to one third of the country's GDP (The World Bank, 2014). As the demography changes and costs for businesses increase, the country faces significant competition from other economies with more favourable conditions for manufacturing. This poses a risk to China as more and more companies pull out of China to setup manufacturing bases elsewhere.

Vietnam's labour costs are cheaper than in China and companies have already started moving some of their operations to the country to diversify away to avoid concentration risk. One such example is Nike, which has larger manufacturing operations in Vietnam than in China (Bland, 2012). Also, Vietnam benefits from the demographic dividend with a relatively young population – Vietnam's median age is 28.5 years (CIA, 2014) as opposed to 35.2 (CIA, 2014) in China, which further makes Vietnam an attractive location for companies to move away from China to Vietnam.

Even though India has lagged behind China in manufacturing so far, the political climate in India has significantly changed with the recent election of Narendra Modi as the Prime Minister (Tim Hume, 2014). As a pro-business person, Modi has repeatedly emphasized on making India the next manufacturing hub. In addition to India being a large consumer market, the recent "Zero Effect, Zero Defect" campaign, expected tax cuts and subsidies for companies opening manufacturing plants in India, has further added to the positive image of India as an attractive manufacturing destination (Times of India, 2014). A country with a huge demographic dividend – with a median age of 26, with the right policies and relaxed regulations, it is only a matter of time before businesses flock to set up their manufacturing operations in the country.

With the US being the biggest trading partner and a market for manufactured goods from China, Mexico is also seen as a strong contender as the next manufacturing hub owing to its proximity to the US (Rapoza, 2014). The gap between labour wages in Mexico and China has come down significantly between 2000 and 2014, owing to a fourfold increase Chinese labour costs since 2000. Productivity improvements have also improved faster than in China between this period, making Mexico attractive from a productivity adjusted wage perspective (Rapoza, 2014; Dobbs, et al., 2012).

6. Conclusion

China being a developed economy itself in 2030 is going to face the same challenges as today's developed economies: a rapid ageing population coupled with a rising dependency ratio, a greying and decreasing workforce and a declining rate of savings and investments. However, China has not yet had the time to put in place social protection and a modern welfare system. Most of the elderly Chinese still depend on family support. Nonetheless, economic transition weakened traditional family ties through urbanisation and modernization (Howe, Jackson, & Nakashima, 2011).

Although China will see a slow-down in its economic development due to ageing, its economy is predicted to experience a structural shift, moving up the value-chain and providing new sources for higher income. Experts agree that China will attain the status of a developed nation by 2030 with a per-capita income of 11,000 USD which nevertheless will remain considerable lower than income in the US or Japan (Goldman Sachs Global Economics Group, 2007).

China is transforming from a labour-intensive towards a skill-intensive economy, thanks to an increasing education level of the Chinese population. Hence, workers will become more productive and the innovation level is very likely to increase, leading to a sustainable development and growth, emphasizing domestic growth drivers and creating new areas of comparative advantage (The World Bank and Development Research Center of the State Council, P.R. China, 2013; Cheng, Li, & Woetzel, 2012). An improved innovation environment and a consequential increase of its technology level will especially be beneficial in the field of renewable energy production, reducing China's tremendous pollution impact and raise the living standards by providing an environment for a healthy life. To further push the technological development, it is important to review policies and regulations that stimulate innovation. Additionally, a liberalization of capital markets is required as in the future China will see a strong trend towards replacing labour with capital requiring increase in investment (Goldman Sachs Global Economics Group, 2007). Moreover, a liberalization of capital markets would enable private households to build up saving, accumulate and preserve wealth and thus prepare for the old-age, decreasing the financial burden for the following generations (Goldman Sachs Global Economics Group, 2007).

However, the power of the Chinese Communist Party (CCP), the only party by which China is ruled, should not be underestimated. The CCP has the power to achieve its targets. Hence, China's political system is rather non-transparent, which makes predictions more challenging. As nobody has a crystal ball, China's future development remains uncertain, but in the current paper we presented a possible scenario of how China could look like in 2030.

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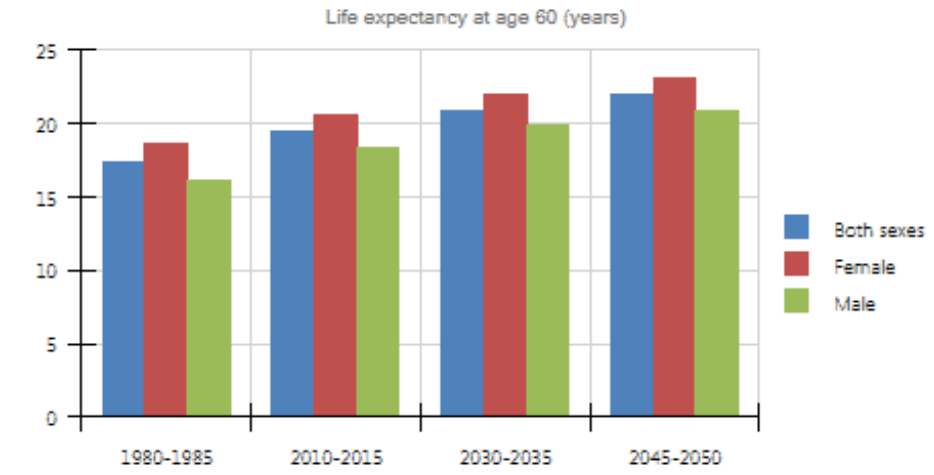
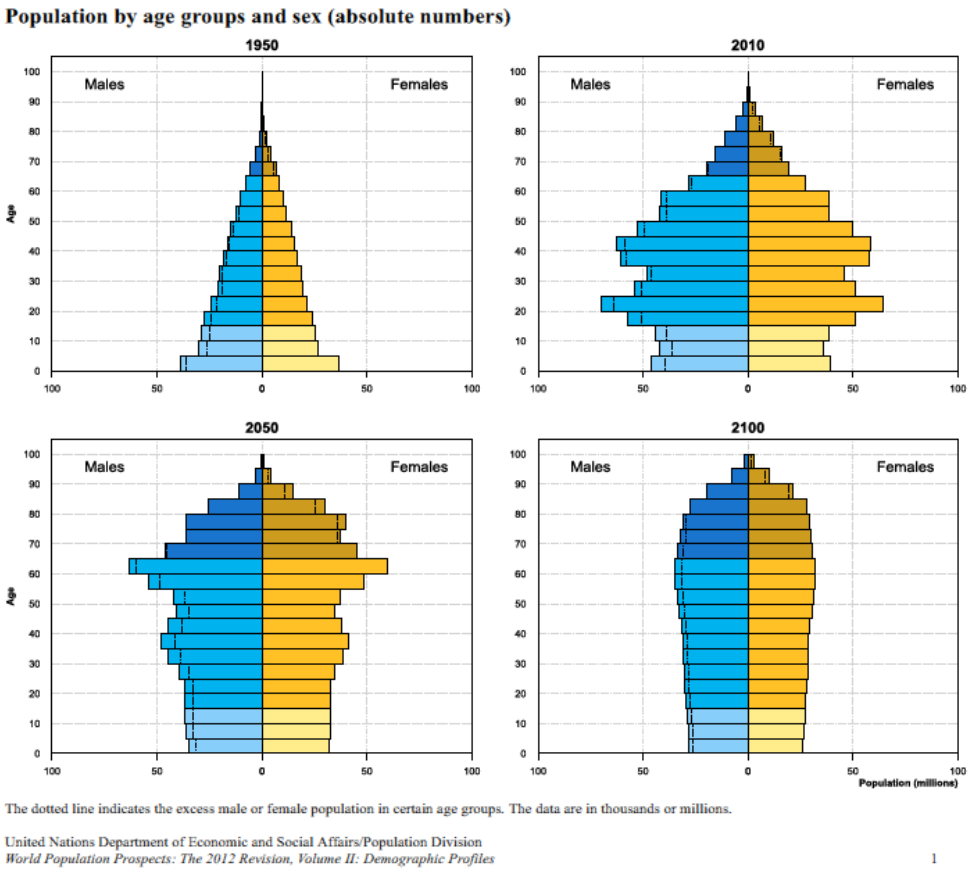
8. Appendix



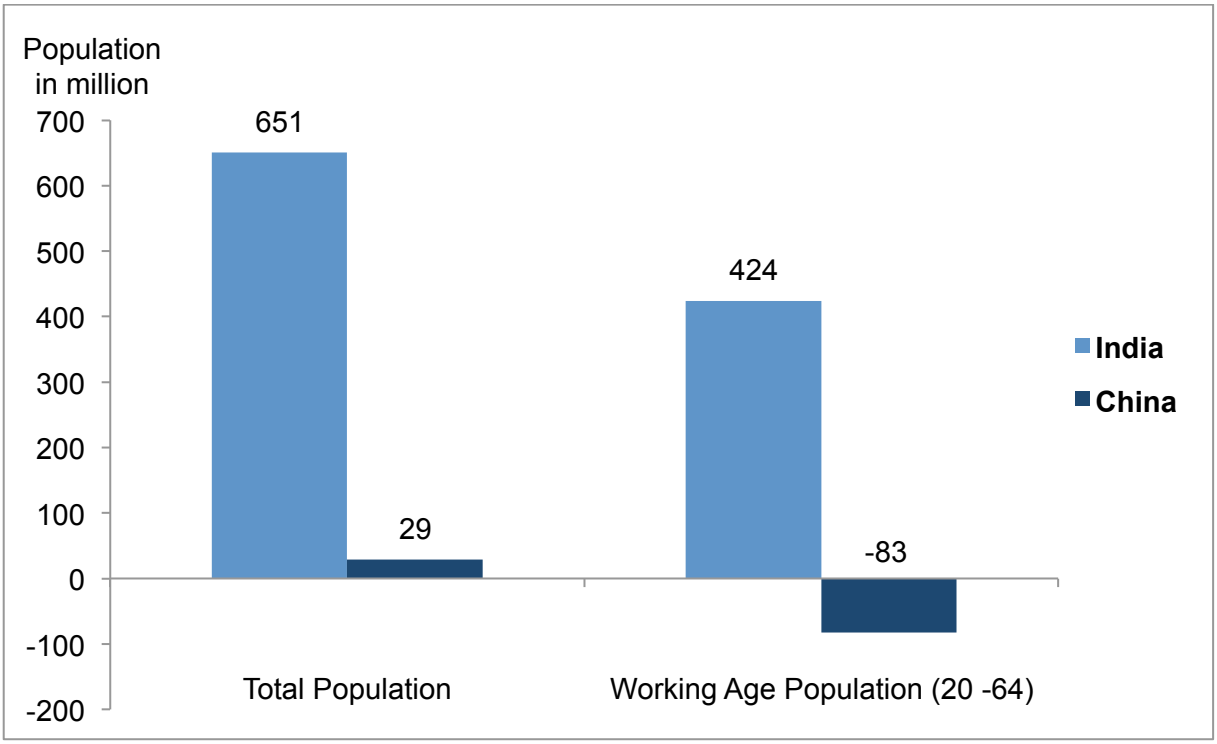
Appendix 1: Life expectancy at age 60 (years) over time

Source: (United Nations, Department of Economic and Social Affairs, 2014b)



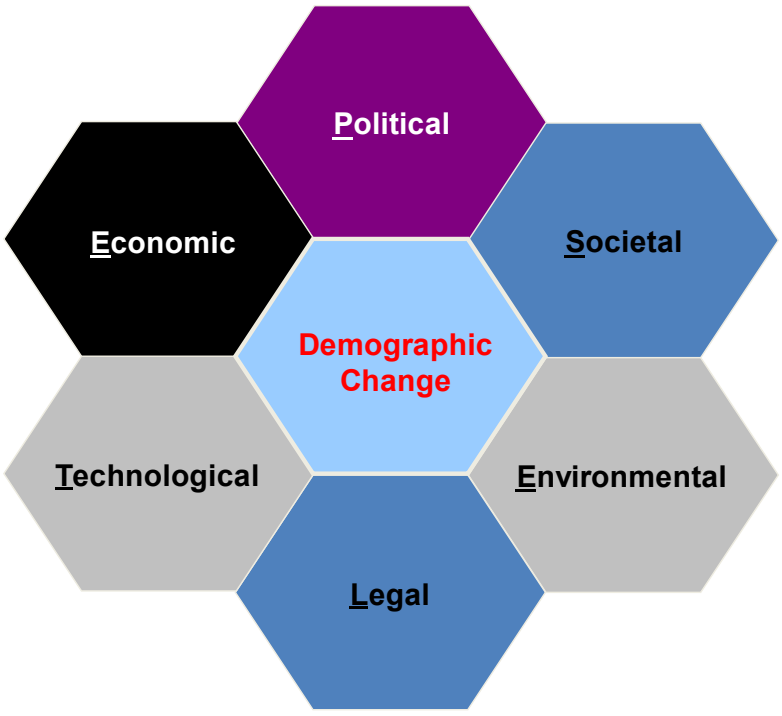
Appendix 2: Development of China's population by age groups and sex (absolute terms) from 1950 untill 2100

Source: (United Nations, Department of Economic and Social Affairs, 2014a)



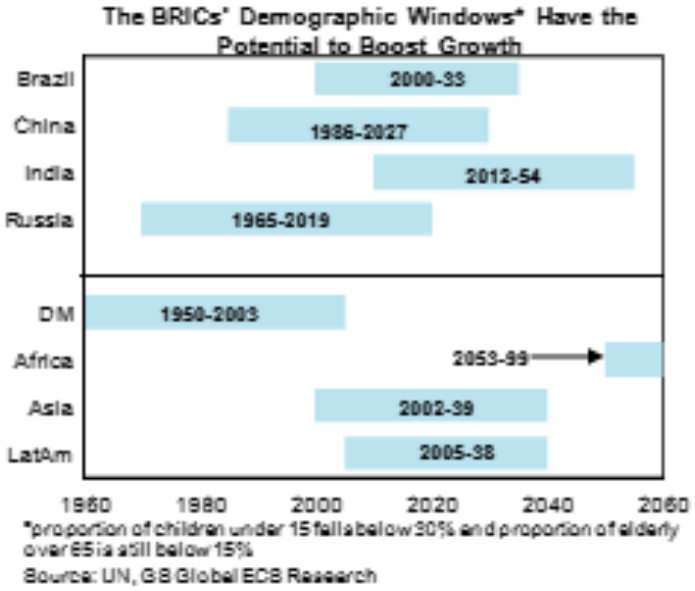
Appendix 3: Changes in populations of India compared to China from 2010 until 2050

Source: (Howe, Jackson, & Nakashima, 2011)



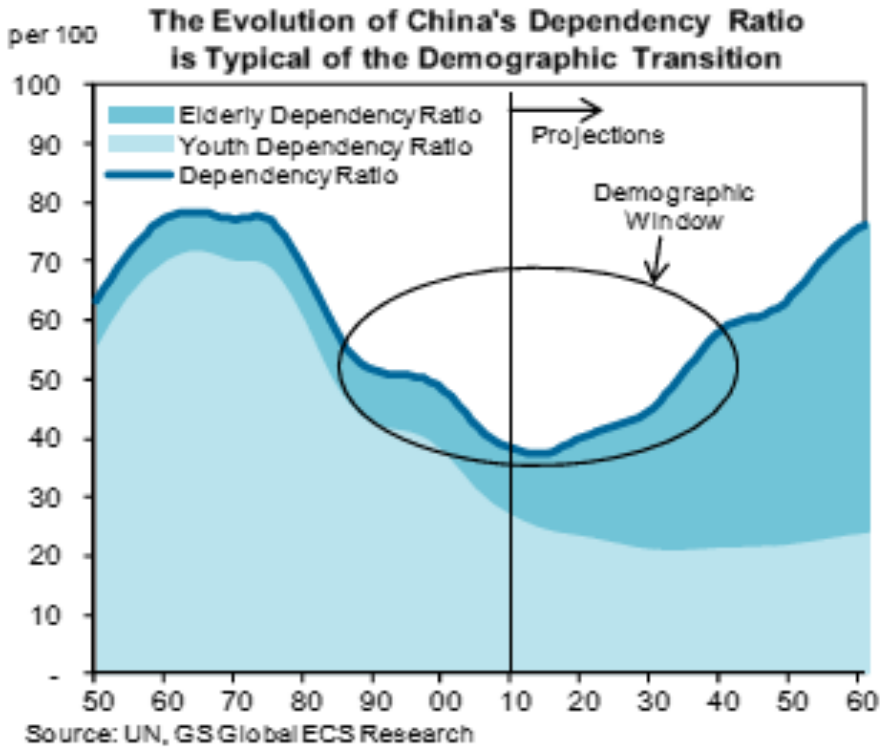
Appendix 4: Elements of the PESTEL-Framework

Source: (Groth, 2014, p. 52)



Appendix 5: Comparison of time frames in which countries will experience demographic windows

Source: (Burgi, Carlson, & Wilson, 2011)



Appendix 6: Development of China's dependency burden split into elderly and youth dependency from 1950 until 2060

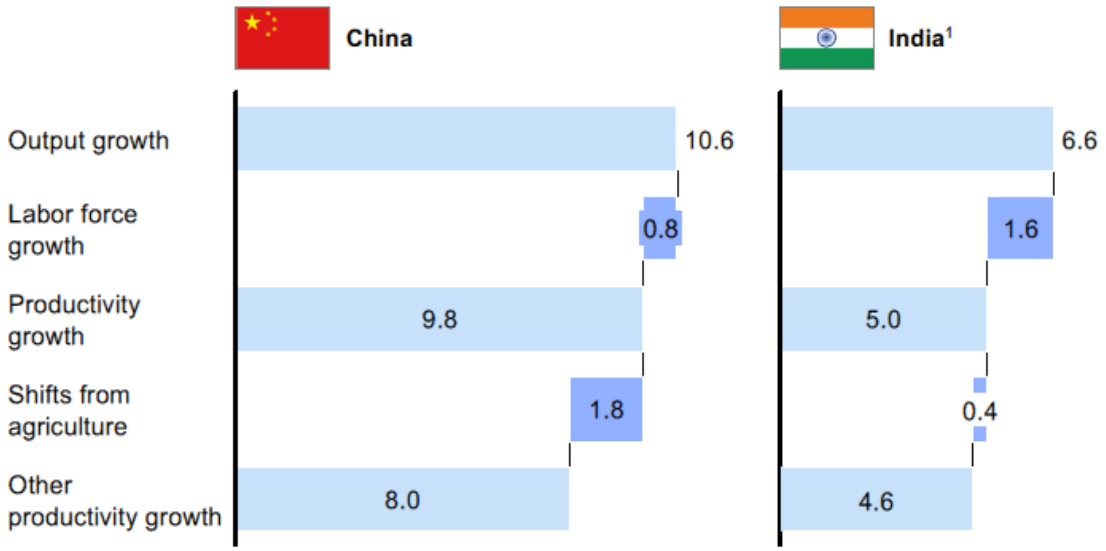
Source: (Burgi, Carlson, & Wilson, 2011)

Exhibit 7

The shift of labor in China from farm to non-farm employment has been a significant driver of economic growth; less so for India

Decomposition of output growth, 1990–2010

Compound annual growth rate, %



1 Data from 1991 to 2010.

NOTE: Numbers may not sum due to rounding.

SOURCE: China National Bureau of Statistics and CEIC data (China); National Sample Survey Organisation and National Accounts Statistics (India); McKinsey Global Institute analysis

Appendix 7: Composition of contributions to growth in China compared to India from 1990 – 2010

Source: (Barton, et al., 2012)

9. DECLARATION OF AUTHORSHIP

We hereby declare

- that we have written this work on our own without other people's help (copy-editing, translation, etc.) and without the use of any aids other than those indicated;
- that we have mentioned all the sources used and quoted them correctly in accordance with academic quotation rules;
- that the topic or parts of it are not already the object of any work or examination of another course unless this has been explicitly agreed on with the faculty member in advance;
- that our work may be scanned in and electronically checked for plagiarism.

St. Gallen, November, 2014

Pia Zimmermann representing the group

Universität St.Gallen

Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

The paradox of women in an ageing society: A comparison of Hong Kong and Switzerland

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Querine Bulthuis
Bianca Strasser

1.1. Executive Summary

Women make up slightly more than half of the world's population yet their contribution to measured economic activity, growth and well-being is far below its potential (Elborgh-Woytek et al., 2013). It is estimated that 865 million women worldwide have the potential to contribute more fully to their national economies (Aguirre et al., 2012). Specifically in rapidly ageing economies, higher female labour force participation can boost growth by moderating the impact of a shrinking workforce. In regions like Hong Kong and Switzerland, labour force supply, one of the dominant factors influencing economic growth, is at risk due to population ageing, making the paradoxical role of women an urgent and relevant issue of consideration. Effective family policy might enable governments to release the power of the female workforce by shaping a family-friendly business and societal climate.

In this context, the paper concentrates on the environment in which to have children with a particular focus on Hong Kong and Switzerland. An emphasis is placed on family policy in these two regions as well as its effects on fertility and female labour force participation. A comparison of the two regions allows a platform for mutual learning in order to deal with the pressures imposed by an ageing population, possibly even turning these demographic challenges into competitive advantages. Recommendations for policy makers in Hong Kong and Switzerland are proposed for coping with the challenges imposed by their ageing population. These recommendations specifically focus on indirect fertility policies and therefore address shortcomings in the areas of childcare, family allowances, paternity leaves, part-time work and housing. However, a significant impact of the proposed recommendations can only be achieved through changes in the cultural mind-set on a micro, meso and macro level in both regions. A shift in society's cultural mind-set is a long-term process, which requires all levels of society to act today. Several of such indirect cultural measures are proposed in order to promote gender equality in the educational, commercial and political spheres.

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1. Introduction of the paradox

Trading off or having it all? For most women, career or motherhood still resembles a drastic choice. Industrialised countries are plagued with the paradoxical role of women in an ageing society. Whereas women represent a highly potential labour force crucial to maintaining economic growth, as birth givers, they are vital for raising the fertility rate of an ageing economy. The clash between employment and family responsibilities often force women to make a trade-off between career and having children. A government's family policy can impact both the female labour force participation and the fertility rate, hereby facilitating the reconciliation of career and family for the female population. A governmental family policy addresses issues including (1) childcare services, (2) cash support for families, (3) leave benefits for working parents, and (4) flexible work arrangements (Public Policy Research Centre et al., 2008).

Developed nations such as Hong Kong and Switzerland are in a strong need of finding options to unlock a highly potential labour force, whilst simultaneously counteracting a further reduction of their fertility rates with the ultimate goal of achieving a positive correlation between the female labour force participation and the fertility rate. The key question of this paper is therefore, how to foster an environment in which to have children in Hong Kong and Switzerland?

The two regions have surprising similarities in terms of population size and dynamics as well as economic development. Apart from their low fertility rates, both have above average life expectancies, steeply escalating 80+ populations and a low unemployment rate. Furthermore, in both regions the strength of the state's position is rather weak vis-à-vis the market (in Hong Kong) and society (in Switzerland). Due to these similarities, shedding light on their respective family policy might enable the transfer of lessons learned and best practices that could prove valuable in setting the policy agenda for the future.

This paper will begin by describing the parameters influencing labour supply before critically evaluating the family policy of Hong Kong and Switzerland with a specific focus on childcare, family allowances, maternity and paternity leaves as well as part-time work of women. Next, recommendations will be made based on the comparison of the two regions and the potential impact and likelihood of implementation will be evaluated. An agenda for future research concludes this report.

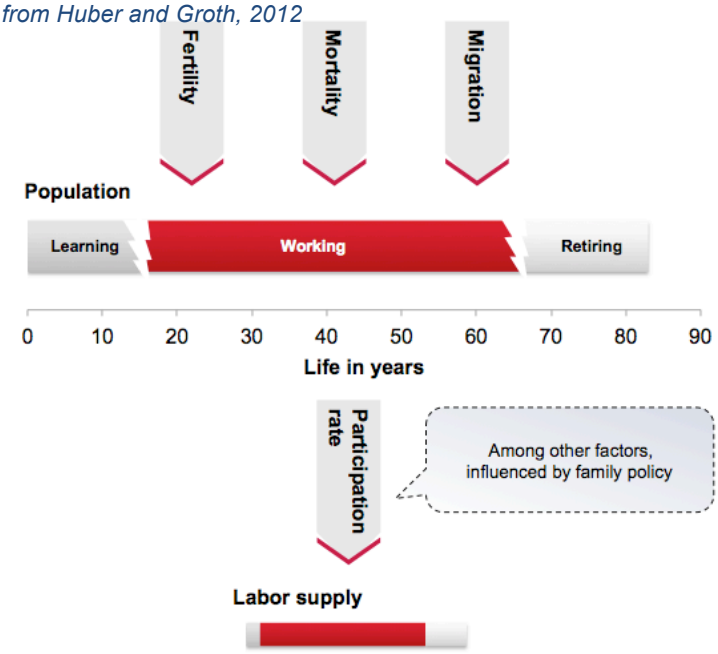
2. The emergence of an ageing society

Hong Kong and Switzerland represent regions that have already reached the ultimate and fourth stage of demographic evolution (Appendix, Figure 3). It is believed that every nation will eventually reach this fourth stage, which is characterised not only by an ageing population, but also by low fertility and decreasing mortality at all ages, resulting into an increasing dependency ratio[5] (Groth, 2014). As a result, this stage translates into a shrinking population and a rapidly rising share of older people, posing numerous challenges. Therefore, ways need to be identified to turn these challenges into viable and sustainable opportunities.

Before any attempts are made to suggest on how the labour supply of these two regions can be increased, the parameters influencing population size and its composition as well as the participation rates of various demographic groups need to be defined. Figure 1 illustrates an overview of the determinants of labour supply.

Figure 31: The determinants of labour supply

Source: Adapted from Huber and Groth, 2012



As is highlighted by Figure 1, the parameters driving demographic change are fertility, mortality, and migration. Over the past decades, both regions experienced an overall declining fertility rate. In 2013, Hong Kong and Switzerland had a fertility rate of 1.1 and 1.5 respectively in comparison to 3.3 and 2.1 in 1970. Currently, both fertility rates are clearly below the worldwide average of 2.5 children per woman (PRB, 2014). Even though future

[5] Age dependency ratio is the ratio of dependents – people younger than 15 or older than 64 – to the working-age population – those ages 15-64 (World Bank, 2014).

projections vary among sources, experts agree on the fact that the fertility rate will remain below the replacement level of 2.1 in both regions until 2030 (Huber and Groth, 2012; Euromonitor, 2014). Such low fertility rates are worrisome for governments as they threaten economic growth and demand significant governmental resources for health services and pensions.

Adding to this, medical advancement and better nutrition enables people to live longer, leaving Hong Kong and Switzerland with soaring life expectancy rates. For example, a baby girl born in Hong Kong in 2030 is expected to reach the age of 88.8, while one born in Switzerland in the same year may reach the age of 87.7. The trends of low fertility and increasing longevity are likely to prevail, thus leading to a drastic shift in age structure of the population in the coming decades.

Regarding migration, Hong Kong and Switzerland have both experienced positive net migration rates. In the future, positive net migration will be an important driver of population growth in Hong Kong. In 2012-2030, 84.8% of population growth is expected to be due to net migration. In Switzerland, the net migration is expected to decline due to governmental intervention. Nevertheless, it will grow in importance as a driver of population growth in 2012-2030 as a result of the drop in the number of births. In 2030, net migration in Switzerland will comprise 93.1% of population growth up from 76.0% in 2012 (Euromonitor, 2013; Euromonitor, 2014). Demographic analyses reveal that migration has helped to counteract the population-ageing trend induced by the other two factors. Therefore, it can be concluded that the principal way to fill labour shortages in the past in both regions has been through migration. In Hong Kong, for example, according to government statistics, almost half of all babies born in 2010 were the children of couples from mainland China. In 2012, a proposal to tackle the tensions arising from this so-called 'birth tourism' was introduced, excluding pregnant mainland women from obstetrics services from 2013 onwards, unless their husbands are from Hong Kong (Jacob, 2012). In Switzerland, the 'Ausländerinitiative' approved in February 2014 intends to limit immigration by putting strict quotas in place (Dacey and Geiser, 2014). Such initiatives have obvious implications for future sources of population growth, directing governments to a stronger focus on fertility policies in tackling population-ageing trends. The upshot of these developments is that both regions are likely to experience an unprecedented development in age composition: the share of the working population is decreasing while the share of the currently non-productive generation (65+) is constantly increasing. The main features of the demographic change occurring in Hong Kong and Switzerland are summarized in Appendix, Table 1.

In a world that has already surpassed a population of 7 billion and appears heading towards possibly 10 billion inhabitants if recent global projections are to be believed, this paper does not argue that the solution for Hong Kong and Switzerland lies in a large increase in their

fertility rates. Recent migration policies in both countries, however, have implications for future sources of population growth, emphasizing the importance of fertility policy on the political agenda.

A spectrum of various family policies exists, in which the level of governmental intervention varies as well as the nature of such intervention, be it direct or indirect. Past research has revealed that the success of direct, pro-natalist interventions has been mixed. Although some of the more direct policies have had a small upward effect on fertility rates, this boost has not been large enough to reverse the overall trend. Those programmes that have had a sustainable positive impact on fertility rates are less directive in nature. Hence, indirect methods should be given precedence over direct policies in dealing with population issues (Bauhinia Foundation Research Center, 2014). It is therefore, that this paper highlights the more indirect fertility policies present in both countries. Specifically, it aims at assessing the policies in place that aid in improving the environment in which to have children. Here the authors argue, that a better balance between career and family enabled by a family-friendly environment will not only increase the female labour force participation, yet also assists bringing fertility rates closer to the replacement level. By improving the work-family environment, the two issues of fertility rates and female participation rates can be tackled simultaneously, making such environment-shaping policies rather effective tools, which deserve special attention.

3. A comparison of two diverse family policies

As mentioned earlier, a spectrum of various family policy models exists with varying degrees of direct or indirect governmental intervention. An international comparison sketches the variety of models in place, with Britain as the non-interventionist model, France as an example of a pro-natalist model, Germany having a pro-traditional model and Sweden adopting the egalitarian model (Public Policy Research Centre et al., 2008). Whereas the former two mainly address the intensity of governmental intervention, with a passive versus active intervention respectively, the latter two largely concern the direction of such policy towards more traditional gender roles (pro-traditional model) or gender equality (egalitarian model). Although a detailed discussion of these models and its implications is beyond the scope of this report, positioning a country's policy accordingly might enrich one's understanding of policy directions and implications (Appendix, Table 2).

Hong Kong

That the paradox debate proves highly relevant for Hong Kong is denoted by its context of a

typical modern society, including an increasingly fast work pace, heavy workloads and the long working hours leading to significant work-family conflicts. As projections reveal that the rate of 1.1 children per female is expected to remain at this level up until 2030, the Hong Kong government needs to carefully address the tension between fertility rates and such work-family conflicts. Both the increasing cost of having children and the rising status of women, as equally competent potential participants in the labour force, are reasons for the transition towards low fertility levels. Improvements in the level of educational attainment and training opportunities have provided Hong Kong women with more autonomy, empowering them to fully participate in economic activities and other aspects of society. Further, various other demographic trends such as improved gender equality and the weakened positions of marriage and family as social institutions add to this complexity. As in Asia marriage constitutes the almost universal setting for childbearing, later marriage, less marriage and (to some extent) higher divorce rates in Asia are outcomes of changed roles of women and attitudes towards traditional family life. Given its critical implications for the ageing of the population, raising the birth rate in Hong Kong has become a relevant population policy that prompted the Hong Kong government into action. On a critical note, however, even though the government is well aware of the benefits of family-friendly policies, there are few targeted measures aiming at encouraging childbearing (Wong et al., 2010). In their 2007 study, Siu and Phillips found that Hong Kong employers' awareness of these policies remains rather low. Recent governmental budget decisions have therefore been criticised, arguing that current policies do little to address one of the root causes of the city's ageing problem, namely that of low birth rates (Lam, 2014).

The increased dependency and reduced productivity due to slow growing and ultimately declining labour forces, require policies that can abate these processes by means of encouraging increased labour force participation among groups where it is currently low. Indeed, by 2031 there will be almost one elderly dependent for every two persons in the labour force (Bauhinia Foundation Research Center, 2014). The labour force is projected to grow until 2018 after which it will slowly decline (Bauhinia Foundation Research Center, 2014) (Appendix, Figure 4). Participation rates among women and of older age groups prove therefore highly relevant and deserve special attention. In 2012, the older age cohorts of over 65s hold 11.9% and 2.9% for males and females respectively, depicting a relatively large gap (Women's Commission, 2013). The activity rate gap between women and men is widest during the family formation phase (30-44 years) and in the years at an age of 50-64 (Appendix, Figure 5). The labour force participation rate for women increased gradually from 48.6% in 2002 to 49.6% in 2012, with the highest participation rates in the age group 25-29 (Women's Commission, 2013). Engaging in household duties was the major cause for

females to not participate in the labour market. As 63.7% of economically inactive persons in 2012 are female, this percentage largely outnumbers that of males and signals opportunities for improvement (Women's Commission, 2013). In intervening, however, the tension between stimulating younger women to enter the labour force and the threat of low fertility rates towards the ageing society must be acknowledged.

Understanding Hong Kong's family policy requires an analysis of Hong Kong's socio-political context, which is close to the liberal welfare regime and follows a system of laissez-faire capitalism. Its family policy can be classified somewhere in between the non-interventionist and pro-traditional regime. Hence, it is expected that governmental policy intervention be kept to a minimum, yet influences of traditional Chinese ethics such as Confucianism foster a preservation of traditional family roles. Although a (policy) comparison with Singapore as a similar city-state is often drawn, it is important to acknowledge the stronger position of Singapore's state vis-à-vis the market and society compared to Hong Kong. Transfer of implications and suggestions therefore require careful consideration, leaving the directive policies to meet specific targets of the Singaporean government in sharp contrast with Hong Kong's current approach. Indeed, rather than strict incentives or disincentives within the pro-natalist model, Hong Kong has adopted a more indirect and "voluntary" approach to family formation. By offering the means and advice about family planning, it focuses on improving the environment in which to have children. Given that success of pro-natalist interventions has been mixed, Hong Kong's indirect approach seems appropriate. Since 2007, pre-primary education vouchers are available in Hong Kong (Bauhinia Foundation Research Center, 2014). Another example of such indirect measures, include the services offered by the government-subvented Family Planning Association such as counselling as well as health and sex education through various clinics. Of the various measures that could influence fertility levels, attention will be directed towards accessible and affordable childcare arrangements, family allowances in the form of education and tax allowances, maternity and paternity leaves as well as part-time work (Bauhinia Foundation Research Center, 2014).

In Hong Kong, the overall development of family-friendly policies has been rather slow. It was only until the Policy Address 2005-2006 that these policies were mentioned. Since 1 July 2006, the Hong Kong government has attempted to implement a five-day working week policy (instead of the common six-day working week), and the Hong Kong Legislative Council has stimulated employers to adopt family-friendly policies (FFPs) such as paternal leave (Wong et al., 2010). This slow development might be partly explained by the relatively low pressure the Hong Kong government faces in implementing such policies. It is expected, however, that the continuing low fertility rate encourages governmental action (Wong et al.,

2010).

Although Hong Kong's parental benefits are limited, childcare centres and kindergartens are of high quality. All of these are privately run either by non-profit or private organisations and receive at least some state funding. Whereas the European Union proclaims that 1% share of GDP should go to early childcare, Hong Kong currently spends 0.14% (Chan, 2014). Given that the presence of childcare for children younger than 3 years old are of significant influence in deciding on childbearing, this could aid to improving fertility rates (Wong et al., 2010). However, as it is rather common to hire foreign domestic helpers to take care of children at home, the affordability of these childcare centres can be questioned. In addition, as these domestic helpers may not always have the necessary skills and qualifications needed, the importation of competent caretakers is likely to gain importance in future policy directions. Indeed, a recent study by the Hong Kong Society for the Protection of Children reveals that 80% of 3,655 parents interviewed mentioned that the difficulty in finding daytime care influenced their decision about whether to have another child. A respondent mentioned that although the overall quality of the services provided was satisfactory, the 11 months waiting time for a subsidized place was too long, and the carer-to-children ratio needed a boost (Chan, 2014).

Except for substantial income tax benefits, there are no child benefits that will be automatically granted to every child. A child allowance on one's taxes can be claimed if you have an unmarried child under the age of 18 or for children between 18 and 25 who study full-time at a university, college or other educational institution. A study by Wong et al. (2010) reveals that "tax reductions and subsidies" is rated as the most important family-friendly policy in deciding on childbirth (Wong et al., 2010). Therefore, it is recommended that Hong Kong's current child policy allowing for tax cuts should be kept in place in order to respond to the low fertility levels.

Currently, the paid maternity leave in Hong Kong is set at 10 weeks, whereas paid paternity leave is in place for civil servants since 2012. Maternity leave usually begins between two and four weeks before the birth due date. During this time, 80% of one's monthly income of the last 12 months is received. Paternity leaves are currently adopted by only few Hong Kong organizations, as there are no legal provisions in Hong Kong that allow fathers to take such a leave. As a study on the means for promoting childbirth by Wong et al. (2010) highlights that parental leave does not strongly boost the childbirth decision, legal provisions might not be necessary to tackle the low fertility issue. No conclusions can be drawn however regarding its effect on stimulating female labour participation. In general, it can be stated that

prolonging maternity and paternity leaves and providing childcare subsidies will, however, decrease women's work-family conflict. Given that the implementation of family-friendly employment practices is encouraged rather than mandated, measurement of its success is problematic. A recent large-scale survey on women's status regarding family contribution, economic participation and community engagement in Hong Kong, reveals that 71% of respondents agreed that employers or supervisors were willing to allow their staff to take leaves or time-offs to handle family matters and 69.1% agree that employers would allow staff to work in flex time upon mutual agreement (Women's Commission, 2011). Nevertheless, the majority concluded that such situations "do not always happen" or "happen occasionally". The same study reveals that 29.6% of married women indicated that they had no intention of returning to work after giving birth due to family responsibilities. In addition, 29.8% of those women who attempted to return to work depict the ability to find a balance between career and family as a major difficulty. 36.4% of women state that their new positions were less favourable after resuming work and 40.1% state that their remuneration was lower than before (Women's Commission, 2011). This implies that improvements are still needed in women's treatment on (their return to) the workplace.

Lastly, part-time employment has grown notably over the years. In the period of 1995 to 2009 the number of female part-time employees was constantly greater than that of male employees, standing at a ratio of around 9:5 in 2009. A part-time job often entails precarious working conditions, insufficient social security coverage (e.g. pension fund) and fewer opportunities for further education as well as training and career advancement. In 2012, 7.1% of employees are working part-time, with an average annual growth of 5.3% against only 0.8% for all employees. Although the voluntary part-time workforce is female dominated, the proportion of men has been relatively high with for example 37.31% male part-timers in 2005. Among female part-time employees, most are married, in their middle age and less educated (Cheung and Holroyd, 2009). 56,5% of female part-time employees argued that they did not work longer hours due to caring for housework, children, elderly, disabled or sick members at home (Women's Commission, 2013). The age pattern of female part-time workers is V-shaped with women having a high rate of part-time employment in the youngest age groups (15-19 years) as well as the older age group (over 40 years) (Ngo, 2002). Women aged 20-29 have the lowest rate, as these women work continuously in the labour market on a full-time basis (Ngo, 2002). As women aged 30-49 have the heaviest domestic responsibilities, the relatively higher rate of part-time employment in this age group is evident. The V-shaped pattern therefore suggests that the childcare burden hinders middle-aged women from working full-time (Ngo, 2002).

Switzerland

Switzerland can be characterised by the two basic principles of federalism and subsidiarity. Therefore, the Swiss people are the supreme sovereign and at the same time the supreme political authority of the country, which implies that they can directly influence government activities through initiatives and referenda unlike in Hong Kong. As a result, its family policy can be classified somewhere in between the pro-traditional regime, which is promoted by the strongest party SVP[6], and a pro-egalitarian regime as highlighted by its respectable gender gap index of 0.78 (World Economic Forum, 2014).

Balancing employment and family responsibilities is therefore also a challenge for Swiss women and the solution models are as varied as the individual demands and requirements. In Switzerland, 62% of the female population aged 15 and above are gainfully employed or are looking for a job. Similar to Hong Kong, the activity rate gap between women and men is widest during the family formation phase (30-44 years) and in the years preceding the legal retirement age 55-64 years, representing two labour force groups with high potential future growth opportunities (BFS, 2014b) (Appendix, Figure 6). Family policy might aid in unlocking this potential. Hence, the family policy of Switzerland including measures of childcare, family allowances, maternity and paternity leaves as well as part-time work will be analysed from a political, societal and economic lens.

One of the main options available to ease the burden for working parents is extra-family childcare provided by grandparents, day nurseries, out-of-school centres, full-time schools etc. Institutional childcare services are not always available in sufficient numbers, nor are they always affordable and compatible with parents' work schedules (BFS, 2014a). Hence, it comes as no surprise that only one fifth of couple households with children use extra-family childcare up to one day per week and just under one sixth rely on it more than one day per week. In other words, roughly 60% of couple households with children do not use any extra-family childcare. Nevertheless, the use of extra-family childcare services has grown markedly in recent years: whereas in 2001, 3 out of 10 households with a youngest child under 15 made use of such services, in 2009 the corresponding figure was 4 out of 10. This increase is particularly marked in the case of institutional services such as day nurseries, full-time schools, supervised lunch programs or out-of-school centres (BFS, 2013). Importantly, the usage of extra-family services increased in correlation with the augmented participation of women in the labour market over the past years. Hence, if the goal is to raise the female

[6] The Swiss People's Party (German: Schweizerische Volkspartei, SVP) is a national conservative and right-wing populist political party in Switzerland.

labour force participation rate, institutional childcare services need further improvement in terms of availability, price and flexible opening times.

According to the results of the Business Census (BC), 3.7 childcare and out-of-school centres existed per 1000 children below the age of 7 in 2008 (BFS, 2010). This implies that Switzerland is far from being able to offer a care place for every child whereas in Germany every child is entitled to a care place (Tagesanzeiger, 2013c). To increase this low number, an impulse programme has been launched in 2003 and has been extended two times by the Swiss parliament until January 2019 with two newly granted credits of CHF 120 million for a four-year period. The programme is responsive to society, which is demanding more governmental support in regards to childcare facilities. Since 2003, 2'431 requests have been approved and led to the establishment of 43'255 new care places. After having been provided a "kick-off" financial support over the first two years, 98% of the day care centres and 95% of the supplementary school facilities are still in operation, proving the centres' sustainability and the success of the programme (BSV, 2014b).

Apart from the impulse program, which fosters the availability of care places, further policies are in place to facilitate the financing of childcare, namely family allowances and tax deductions. Since January 2009, a new federal law on family allowances is valid. Accordingly, a minimum allowance of at least CHF 200 per child, per month shall be disbursed up to the age of 16 and an education allowance of at least CHF 250 for 16-25 year-olds who are still in education (BSV, 2014a). A few years later in 2011, the tax deduction law has been introduced, allowing working parents to deduct day care costs from their earnings for the direct federal tax with a maximum of CHF 10,100 per child[7] (SRF, 2013). This dynamic evolvement illustrates that Swiss family policy has seen many changes in the past decade. However, the question remains if this is enough to stimulate women to balance employment and family responsibilities. According to the OECD, compared to international standards childcare costs are particularly high in Switzerland[8] and tax incentives are perceived as too low (Müller, 2012). Hence, couples with children not often option for full-time employment for both parties. Depending on the age and number of children, the mother's second wage may end up being used up by these extra childcare expenses, resulting in reduced motivation and incentives to take on work responsibilities. Taking the case of Scandinavia, it is argued that the high number of full-time women, currently well above the OECD average, is partly enabled by government investment in an extensive network of childcare facilities. According to the UNO, EU and OECD, each country should invest a certain percentage of its GDP in family external childcare. This would require

[7] Please note that these provisions vary according to the specific canton

[8] The cost of a care place per day ranges between CHF 70 and 140.

Switzerland to spend 5 times more on family external childcare than the country is investing today, namely CHF 5,5 billion (Tagesanzeiger, 2013a). Worth mentioning is also the family initiative launched by the SVP in 2013 (Appendix, Figure 7). Even though it has been rejected, the initiative can be interpreted as a step towards a more pro-traditional family model, possibly signalling pro-traditional tendencies among the population and Swiss politics[9] (NZZ, 2013).

Regarding maternity and paternity leaves, working women are eligible for 14 weeks of maternity leave. They will be paid at 80% of their full wage for 14 weeks after childbirth. Legally, fathers are allowed to take 1-2 days off but many companies implemented paternity leaves of 15 days or more. Companies believe and acknowledge that paternity leaves will also pay off from an economic perspective and therefore firms such as Raiffeisen and Clariant allow their employees a paternity leave of 10 and 16 days respectively (Tagesanzeiger, 2013b). From an international perspective, Switzerland can in this incident been recognised as a developing country. The EU demands in its member states four months of parental leave of which fathers must obtain one month. Substituting maternity leave with parental leave seems to be the way forward in Europe. In Sweden, parents can take off 480 days, while in Germany couples are granted 14 months parental leave of which fathers have to take two months (Theunert and Hodel, 2013).

Finally, part time work is on the rise in Switzerland. Nowadays, it is increasingly rare for single salary households to meet the financial needs of a family. Consequently, it is often a financial necessity for both parents to engage in paid employment. At present, more than half the women in employment have a part-time job and often with a low work-time percentage (under 50%) when children live in the household (BFS, 2014a). Appendix, Figure 7 highlights the level of employment among women and men. 41.4% of women are full-time employed in 2013, but this percentage also includes women without children. The percentage reduces significantly when looking at mothers with children aged below 25, which lies at 17%. Even though the share of mothers who are economically inactive has fallen since 1992 (40%), more than one fifth are still economically inactive (BFS, 2014c). On a positive note, the share of mothers working part-time has risen and the share of mothers with higher work-time percentages has increased more significantly than that of mothers with smaller work-time percentages. Putting this into a broader perspective, part-time work allows women to continuously remain in the labour force, which facilitates the participation of older women in

[9] The issue at hand was if housewives should also receive a tax deduction, like working couples, when looking after their children at home. The party wanted to subsidize mothers with CHF 1.4 billion.

the future, as they do not face the difficulty of re-entering the work environment, since they never left the labour force.

4. Recommendations based on mutual learning

Hong Kong

Although over 80% of women and men agree that "both women and men should contribute to the household income", illustrating that Hong Kong's society has generally accepted the change in women's economic role, female labour participation rate remains substantially lower than that of men (Women's Commission, 2011). Although the awareness of the importance for family-friendly policies rises, little has truly changed the work-family context in Hong Kong. Paul Yip, committee member of the government's steering committee on population policy argues, "Women in Hong Kong do desire a child. It is the social barriers that deter them from having one" (Wong, 2013, para. 4).

Critics argue that the Hong Kong government falls short in its family policy. Whilst some sense that governmental action is short-term oriented and prompted in wrong directions, focusing solely on funding services for elderly people rather than encouraging people to start or extend families, others feel the Hong Kong government in general operates as a business rather than a political system. Citizens receiving a repayment of their taxes "as their money was not needed", might indeed signal of what some label a lack of governmental vision.

Childcare

Tax deductions for using childcare facilities as implemented in Switzerland could alleviate the financial burden of raising children. Before such a policy is to become effective, however, more quality childcare is needed. Here, the Swiss impulse programme might be considered as an option to tackle the current demand-supply gap of 99,000 children in 2011 without subsidised childcare places (Chan, 2014). Currently, there are examples of childcare centres that are closed whenever they are not profitable. More governmental support should therefore be encouraged to respond to demand.

Family allowances

Regarding financial incentives to encourage childbearing, it is important to raise the issue of extremely high living costs in Hong Kong and limited housing availability. Although tax breaks might alleviate some of the financial burden of raising children, more private living and public open space are needed to create a child-friendly environment. Also, the non-affordability of housing adversely effects people's aspirations for family formation. Here, the Singaporean public housing policy might be worth considering. By publicly governing and developing residential housing, the Hong Kong government could provide affordable housing to families,

thereby incentivizing people to start a family. Generally speaking, the current tax rebates are preferable over cash allowances as they encourage women to remain in the workforce.

Paternity leaves and flexible career models

An important lesson for Hong Kong centres on a more flexible working environment in which career development or having a family no longer constitutes a trade-off. Tax incentives could for example be provided to companies that set up family-friendly programs for employees. In general, the laissez-faire approach adopted by the Hong Kong government has proven unsuccessful in encouraging flexible working arrangements in the commercial sectors. It must be acknowledged, however, that the work-family balance is not only a governmental responsibility yet rather that of the community as a whole. Here, much can be learned from Switzerland. Taking paternal leaves as example, most companies offer paternity leaves far extending the 1 to 2 days that are legally provisioned in Switzerland. Providing paternity leaves signals to the community that men have a responsibility to take care of their families, thereby tackling stereotypical gender roles. Hong Kong companies must acknowledge the social costs incurred by keeping working parents away from their family, and understand the ripple effects of work-family balance allowing for improved employment relations, higher employee engagement, reduced staff wastage and reputation building. Signals to the community in which women's contributions are valued might aid in increasing such awareness. Also, the currently weak position of trade unions in Hong Kong, leaving employers often in the dominant bargaining position in employment relations, illustrates future opportunities to increase the power of such institutions.

Generally speaking, flexible career models including opportunities for flexible working hours, standard working hours and the five day work week must be encouraged to facilitate breaks and re-entries among women. Current policy does not address such obstacles hindering housewives to re-enter the job market. Further measures are needed that enable women to continue learning and training of new skills during breaks. Also, neutrality in promotion and fair treatment when returning to work should encourage female to pursue their professional career.

Switzerland

Childcare

The citizens of Hong Kong acknowledge the value of pre-primary education, encouraging parents to send their children to kindergarten, thereby indirectly leaving more room for parental (flex time) work opportunities. Switzerland needs to be more aware of how early childhood programs can benefit children in order for them to make full use of the institutional

childcare services offered. Care structures have the positive side effect of a better integration of all children, which in turn has a positive outcome on educational success. The self-conducted survey showed that Swiss citizens are convinced that home care is perceived better than centre care for the child's development (Appendix, Figure 8). In Hong Kong, formal schooling is an important avenue to social and economic mobility, and preschool is perceived as the first step along this avenue (Boocock, 1995). Therefore, it is recommended to offer an optional kindergarten year from the age of 3 years. In Hong Kong, 90% of 3 to 6 year olds participate in optional preschools. In other words, most children spend three years at a Hong Kong kindergarten, compared to only two years in Switzerland. An optional kindergarten year, which has already been introduced in the canton of Tessin, would not only benefit children but also parents, as attending kindergarten is free of charge in Switzerland (SAGW, 2012). Regarding opening times, Switzerland can again learn from Hong Kong's flexibility, offering longer opening hours as well as kindergartens that are open on Saturdays. Finally, with more childcare centres being established due to the impulse programme, it is believed that market forces will eventually drive prices down as soon as demand meets rather than exceeds supply. Hence, measures in relation to childcare services should be preferred over stronger tax deductions for childcare facility usage.

Parental leave

Switzerland lacks in many family policies related aspects behind international standards, leaving room for improvement. When looking at maternity and paternity leaves, countries such as Sweden and Germany demand more equality and implemented therefore parental leaves for couples. To encourage mothers and fathers equally in their parenting roles and to avoid falling into the traditional family trap, where the father returns to full-time employment after two days and the mother starts with a low part-time work percentage due to the family responsibilities, it makes sense to follow international standards and implement a parental leave in Switzerland. Finally, this would also reflect a move towards a more pro-egalitarian family model as represented by Sweden.

5. Potential impact and likelihood of implementation

After a reflection on the above policy measures, some might conclude Switzerland is in a more advanced stage of family policy implementation compared to Hong Kong. On a critical note, however, as Switzerland too lags behind international standards, much has to be improved upon in both regions. After having assessed the main family challenges for both regions, the authors propose a policy focus on work-life harmony in Hong Kong, whereas Switzerland could benefit from emphasizing family-friendly policies, with both directed

towards providing flexible working strategies.

This report highlights some of the actions that could be adopted by the respective governments resulting from mutual learning and international comparison. It must be noted, however, that the potential impact of such undertakings will only flourish when shifts in societal mind-sets and practice occur simultaneously. In both countries, it appears that entrenched traditions still hinder true female integration. Indeed, in Switzerland women's independence is still a relatively new phenomenon, with evident consequences still felt today. 75% of female teenagers in Switzerland, for example, still choose from a narrow range of stereotypically feminine apprenticeships (Trachsel, 2014). And only just recently, the NZZ published an article with the headline "Many mothers do not want to work" (NZZ, 2014). In Hong Kong too, women remain commonly stereotyped as family carers (Women's Commission, 2011). Importantly, one must also acknowledge that the most important driver for family policy change in Hong Kong has been a concern for population growth rates in the context of population ageing, rather than a concern for the wellbeing of women. The superseding expectation in Hong Kong remains that social welfare is to be avoided, and that people themselves are in charge of taking care of themselves. Given that it is not to be expected that this laissez-faire approach will change any time soon, the suggestions above might therefore be overly optimistic in the short-term. Also, one could question Hong Kong community's (immediate) acceptance of such more active intervention. Similarly, before the suggested policy measures could be put in place in Switzerland, a significant culture shift is required. In order for both family policies to improve and develop, the authors believe there is a need for shaping the context in which such policy is set. Indeed, the effectiveness of policy measures will be partly determined by *women's personal perceptions* of work-family conflicts as well as the suitability of alternatives to tackle these trade-offs ranging from opting out of motherhood or opting out of paid work (Thein and Austen, n.d.). Specifically, the authors are convinced that both societies need to truly embrace gender equality (i.e. change in cultural mind-set of society) before family policy becomes (more) effective and accepted politically and practically. Such acceptance starts at school, in which both girls and boys have to be taught to aim for ambitious careers, to demand equal treatment and in which girls should be encouraged to perceive themselves as future income providers. "It should be natural for a girl to think about becoming a carpenter when she grows up, and for a boy to want to be a nurse" (Trachsel, 2014, para. 3).

Within organizations, once work-life balance policies are widely adopted, companies must extend such policies by emphasizing women's progression within organizations by means of female talent development programmes. Lastly, the authors recognise the value of female political participation in shaping a women-friendly environment that could foster female

economic participation. Indeed, it is felt that increased female representation within the political sphere could influence the nature and direction of policies. In the case of Hong Kong, this could for example potentially enable a shift from a family policy's focus on solving population growth issues to a true concern for women's wellbeing. Similarly, in Switzerland female political representation signals the empowerment and valuable contribution of women, in which politically active and successful women could serve as role models shifting society towards stronger gender equality. The authors believe such developments in the educational, commercial and political sphere could indirectly shape both regions' context in creating an environment in which gender equality is fostered. In turn, governmental intervention through family policies could flourish in such a setting.

Overall, if a coordinated and effective family policy is operated and if policy makers follow the aforementioned recommendations, the impact of motherhood on the employment of women will be greatly reduced. Exact impacts are hard to estimate, but if no further measures to reconcile work and family life are implemented in Hong Kong and Switzerland, the traditional division of roles in the family will most probably persist. Employment and family responsibilities would still represent a trade-off, resulting in a further decrease or stabilisation of the fertility rates.

6. Conclusion

In the face of a slow-growing and ultimately declining labour force in Hong Kong and Switzerland, the paper focused on policies to slow this process by encouraging increased labour force participation among a group where it is currently low – women – and counter the downward trend of the fertility rate in these regions. Intervention, however, would have to be sensitive to the tension between encouraging younger women into the labour force and the need to support a child-friendly environment that might encourage the future reproduction of the population. Consequently, the paper focused specifically on policies affecting women between 15-64 years old. Even though such policies can have spillover effects on the female labour participation rate of the 65+ populations, this age group is worth analysing in a separate paper. In this regard, it would be interesting to critically evaluate the pension schemes of both regions and look into the discussion of increasing the retirement age vs. implementing a certain number of years that one must work before retiring. Further, delving into the younger age group would allow investigating the impact of longer learning time span on the labour supply.

Even though many future research streams can be evaluated, the recommendations

highlighted for the two regions can already have a significant impact on female participation rates and fertility rates if correctly implemented.

7. References

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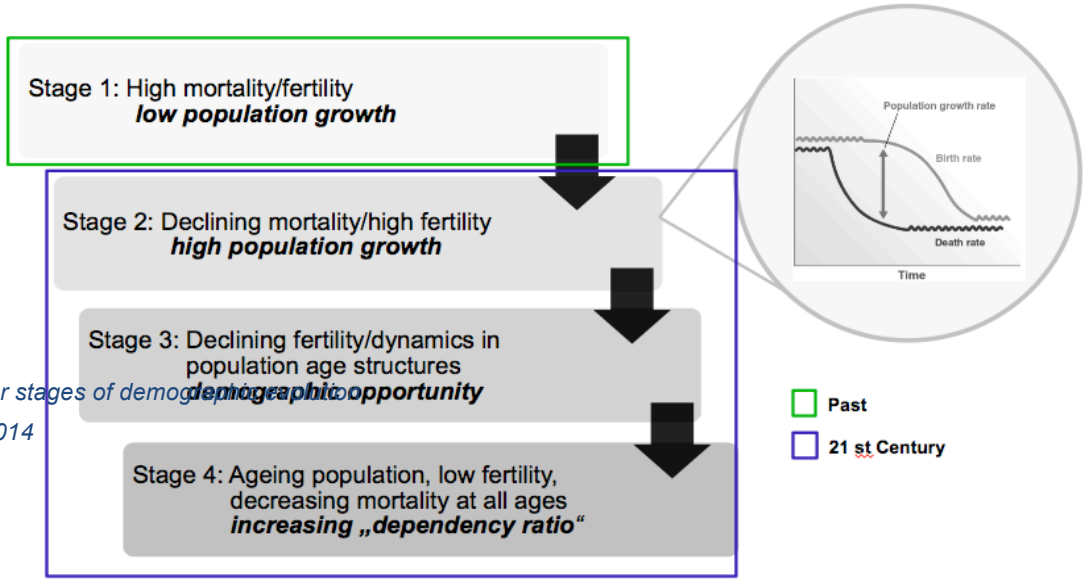
8. Appendix



e 2: The four stages of demographic transition

ce: Groth, 2014

	Hong Kong		Switzerland	
	2014/2013*/2012**	2030	2014/2013*/2012**	2030
Population (millions)	7.2	8.2	8.2	8.9
% of population: < Ages 15	11	13	11	14
% of population: Ages 65+	15	25	18	24
Total fertility rate	1.1*	1.2	1.5*	1.8
Net migration rate per 1,000 population	4	6	6	3.2
Life expectancy	83.5** (M: 80.4, F: 86.6)	85.5 (M: 82.5, F: 88.8)	82.9** (M: 80.6, F: 85.1)	85.4 (M: 83.2, F: 87.7)

Table 1: Future development of Hong Kong's and Switzerland's population

Sources: PRB, 2014; Euromonitor, 2013; Euromonitor, 2014

Countries	Family Models	Objectives	Cash support	Benefits for working parents	Childcare services
France	Pro-natalist	Raise fertility rate	High	Medium	High
Germany	Pro-traditional	Preserve traditional family	Medium	High	High
Sweden	Pro-egalitarian	Promote equality between men and women	Medium	High	High
Britain	Non-interventionist	Maintain minimum intervention to families	Low	Low	Low
Singapore	Pro-natalist	Raise fertility rate	Low	Low	Low

Table 2: Cross-national comparison of family models

Source: Adapted from Public Policy Research Centre et al., 2008

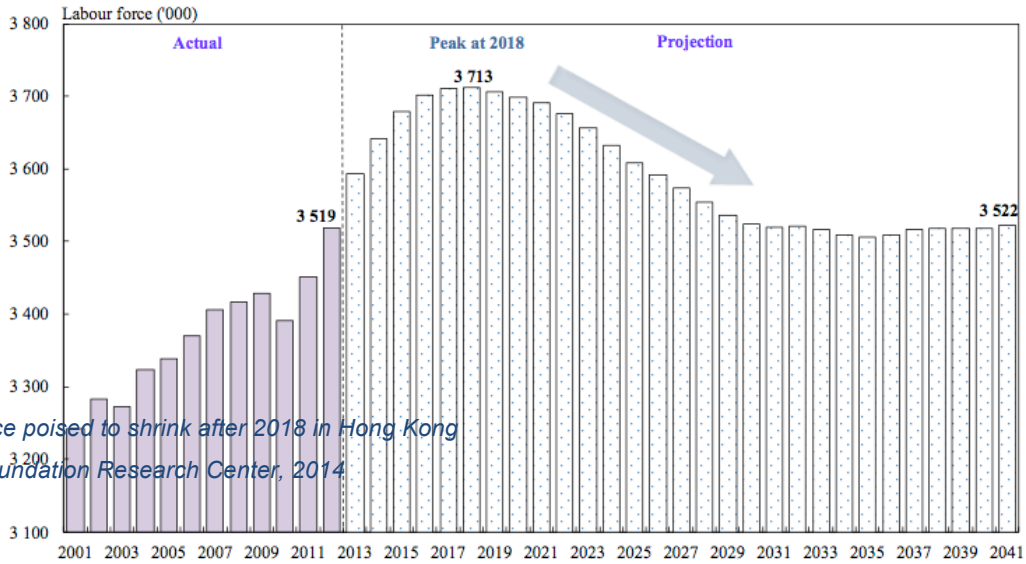


Figure 3: Labour force poised to shrink after 2018 in Hong Kong

Source: Bauhinia Foundation Research Center, 2014

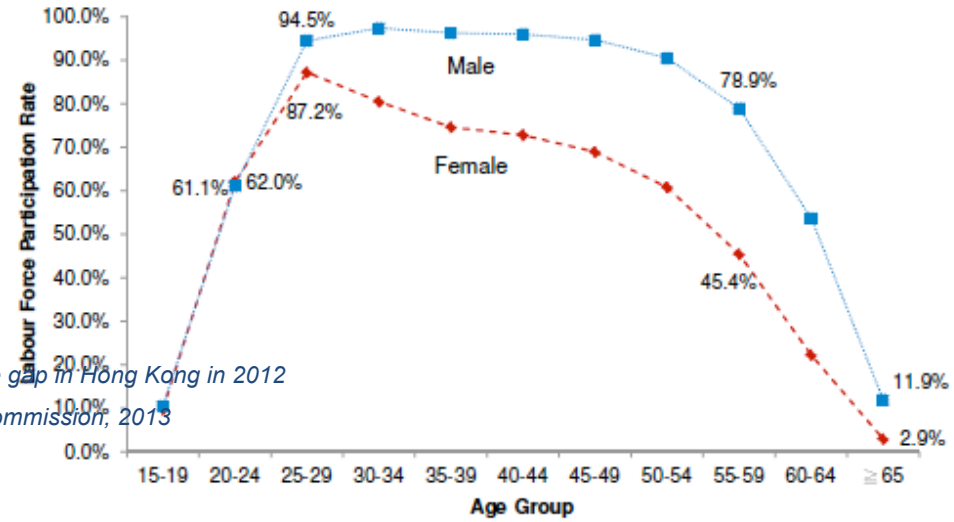


Figure 4: Activity rate gap in Hong Kong in 2012

Source: Women's Commission, 2013

Women Percentage of workforce (employed and unemployed) Men

of the population in different age groups

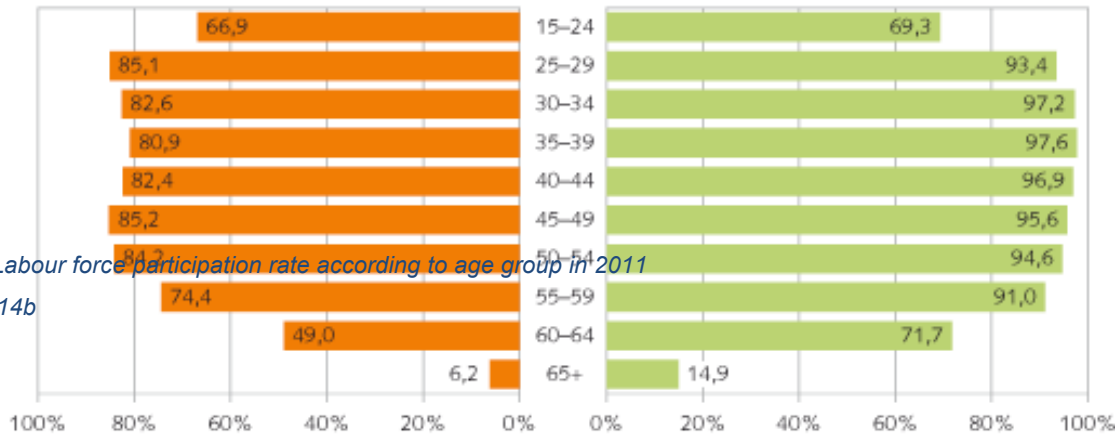


Figure 5: Swiss Labour force participation rate according to age group in 2011

Source: BFS, 2014b


EXTRABLATT

der Schweizerischen Volkspartei • www.svp.ch • Ausgabe Februar 2013

Staatskinder?

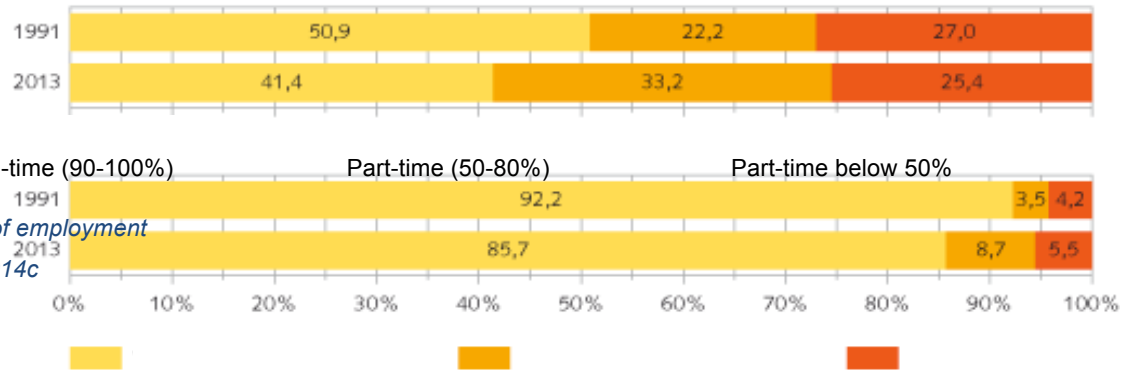
Nein zur Verstaatlichung der Kinder

Figure 6: Propaganda for SVP initiative

Source: SVP, 2013

Women

Men



gure 7: Level of employment

ource: BFS, 2014c

44.44% *rather home care 55.56%*

re 8: Self-conducted survey: Home care vs. centre care in Switzerland

Figure 9: Interview with Wolfgang Schlangmann, 20. October, 2014 (Managing Director and Owner at Esscrown ltd. In Hong Kong)

1. **What can you tell us about childcare services in Hong Kong? Does the government support these?**

- In general, governmental schools are free of charge but parents prefer to send their kids to private schools, as these are perceived better. Such schools cost a lot of money.
- Many families also have maids that look after their children. One maid costs approx. 4000 HK dollars a month including food and there are roughly a few hundred thousand maids in HK, meaning not only the rich ones can afford a maid.
- The government does not support childcare centers like Switzerland does with its impulse program. Centers are simply closed if they are not profitable.
- The government would have enough money to support childcare centers. It already happened that citizens received a repayment of their taxes because the government did not need all of the money. In other words, there seems to be a lack of vision and the government operates more like a business instead of a political system. For instance, the mayor is called chief executive officer in HK. Childcare support instead transferring money would be a better option in my opinion.

2. **Do families receive child allowances?**

- Child allowances are not worth mentioning, as these are very low.
- Families do not receive money – actual transaction – for having kids.

3. **Are paternity leaves common? Do policies exist? How do leaves differ in comparison to policies in Europe?**

- Paternity leaves do not exist. Normally, families are supported by relatives particularly grandparents. This is part of their culture.
- If family support is not there, it gets really difficult for a couple to look after their children and afford childcare services.
- In Europe, it is often also common to take a baby year off, leaving the job for a year and after that return into the same position. This does not apply to Hong Kong.

4. **How many people in your company work part-time and why?**

- In my business – 12 employees – one woman works part-time and only because I had to "force" her to.
    - She has one children and a partner and they could not afford the baby without both of them working full time. Hence, I made an exception and pay her like a full-time employee out of sympathy.

5. **How does the old age assurance system work in Hong Kong?**

- Early retirement is not too uncommon if people have the money – cost driver are the flats/houses.
- Provident fund (your employer and yourself pay into this fund – like in Switzerland the second pillar)
- Look into Mandatory Profit Fund (MPF)

6. **How is the current situation in Hong Kong (demonstrations) correlated to the region's family policy?**

- There is a young generation in Hong Kong that cannot self-actualize themselves.
- Housing is extremely expensive and due to migration (60000 people a year, 160 new people a day), prices are not coming down.
- No ownership can be generated and it is a social strife.
- There are hardly any regulations in place – some regulations would be good for Hong Kong.

- There is no family policy, no protection, only a tax fee of 15% (roughly 30% in Switzerland, which is low compared to other countries).

7. What would help to improve the family friendly environment in HK?

- Government housing
    - Because housing represents the main cost driver
    - Many still live with their parents – if you don't have their support you start struggling as a family

8. What is better in HK compared to CH?

- Healthcare system
    - High quality but public
- Public transport
    - Cheap and well connected

Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

How will demography impact the conflict between Israel and Palestine?

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Alexandre Lusenti (alexandre.lusenti@student.unisg.ch)
Daniel Kunz (daniel.kunz@student.unisg.ch)
Rouven Grünig (rouven.gruenig@student.unisg.ch)

EXECUTIVE SUMMARY

A quick glance at the region's current population growth rates brings back to the front scene the prominence of demographic issues regarding the current Israel-Palestine dispute. In fact, current demographic figures display consistent differences in the population growth rate between the Israeli Jewish population and both Israeli Arab and Palestinian Arab populations.

With peace talks at a standstill and no conflict resolution to be expected in the near future, the two opposing camps are keeping a wary eye on any potential game-changing factor that may provoke a radical change in the current balance of power. While the Israeli government is careful about a growing Arab population, the Palestinian Authority is well aware that demography currently works in its favour, and may well modify the ratio of power with Israel in the future.

In this paper, we provide an innovative theoretical framework aimed at examining demographic figures both in Israel and in the Palestinian Territories. On the basis of our research, we derive two major demographic trends: 1) the Arab population is likely to exceed the Jewish population in the future 2) young people represent the largest group both in Israel and the Palestinian Territories. Finally, we form impact scenarios on how the two tendencies may have an influence on 1) conflict resolution 2) status quo 3) generalized conflict.

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1 Context and Introduction

The goal of this paper is to find out how current demographic trends may affect the Israeli-Palestinian conflict in the future.

The paper is structured as follows: Chapter 1.1 presents the main reasons behind the assumption that demography is likely to influence the Israeli-Palestinian dispute, and briefly discusses the basic features of the conflict. Chapter 1.2 then presents the criteria according to which we will analyse the different demographic trends, as well as the methodology and terms used in this paper. Chapter 2 first provides an overview of the main demographic factors that will be considered. Based on our Demographic Impact Model, we examine how Primary Demographic Factors (Fertility, Mortality and Migration) influence Secondary Demographic Factors (Ethnic Group Composition and Age Distribution) and draw forth two main demographic trends. In chapter 3, we discuss the impact of these two trends towards the three scenarios of the Israeli-Palestinian conflict and conclude with suggestions for future research.

1.1 The case for demographics to impact the Israeli-Palestinian conflict

12.2 million inhabitants lived in the territory comprised of Israel, the West Bank and the Gaza strip in 2012, with 8 million being Israeli residents (75% Israeli Jewish and 21% Israeli Arabs) and 4.2 million living in the West Bank or the Gaza strip (91% of Palestinian Arabs and 9% of Israeli Jewish at the aggregate level) (World Bank, 2014a, 2014b). Interestingly, current demographic figures display consistent differences in the population growth rate between the Israeli Jewish population and both Israeli Arab and Palestinian Arab populations, with the Jewish population of Israel growing at a 1.7% annual rate, while the Israeli Arab population is increasing at a 2.3% annual rate and the Palestinian Arab population at a 3% annual rate, almost twice as high as the Jewish population (World Bank, 2014a, 2014b).

With peace talks at a standstill and no conflict resolution to be expected in the near future, the two opposing camps are keeping a wary eye on any potential game-changing factor that may provoke a radical change in the current balance of power. While the Israeli government is careful about a growing Arab population both in Israel and in the Palestinian Territories, the Palestinian Authority is well aware that demography currently works in its favour, and may modify the ratio of power with Israel in the future. In fact, a quick glance at the region's current population growth rates brings back to the front scene the prominence of demography regarding the Israeli-Palestinian dispute.

Yet, as many scholars such as Dellapergola (2001, 2010, 2013) Friedlander & Goldscheider (1984) and Goldscheider (1995) showed, the case for demography to impact the Israeli-Palestinian conflict already played an early role in the balance of power between Israel and

the Palestinian Territories, all the more since both communities were rapidly growing after 1948. For example, Israel sought to redress the "demographic imbalance" in the West Bank and the Gaza strip in the 1980s through the establishment of numerous urban settlements, while encouraging Jewish immigration to Israel at the same time (Gabriel & Sabatello, 1986).
But the conflict that we know today took root long before, most notably with the Balfour Declaration of 1917 when for the first time Jews and Palestinian Arabs were faced about the status of the Palestine region (ranging from the Mediterranean Sea to the Jordan River). With the proclamation of independence of Israel in 1948, the unsolved conflict between local Arab and Jewish communities became increasingly political and led to numerous armed conflicts (Bickerton & Klausner, 2009). In the aftermath of the first Arab-Israeli War, more than 700'000 Palestinian fled Israel to the West Bank, the Gaza strip or contiguous countries such as Lebanon, Syria or Jordan (Dumper, 2006). Since then, local populations living in the Palestine region have been consistently affected by armed conflicts, and continue to suffer from the absence of a long-lasting conflict settlement.

1.2 Methodology and Criteria of Analysis

In order to discuss how demography may impact the conflict between Israel and the Palestinian Territories, we conceived of a theoretical framework aiming to make the connection between these two elements (see Figure 1). In this model, Primary Demographic Factors influence Secondary Demographic Factors, from which we can deduce two major demographic trends. The latter are then discussed in terms of how they may influence the three Israeli-Palestinian conflict scenarios.
It is important to note that we are not in the position to give a definite answer to the question of how will demography impact the conflict. In fact, we may only provide impact scenarios based on the figures we found. On the other hand, our objective is double: 1) provide an innovative and well-structured framework where current demographic issues are substantially examined, and 2) give the opportunity for further academic research to have a closer look at how the two demographic trends may affect the three conflict scenarios (see Figure 1). In order to reduce complexity and due to the limited scope of the paper, foreign drivers of the conflict (such as other Arab countries) and unpredictable events (such as natural disasters and diseases) are not taken into account as impact factors in our model. Finally, it is important to note that due to the politicized nature of the topic, the reliability of academic sources and accessibility of demographic data often hindered the progress of our research.

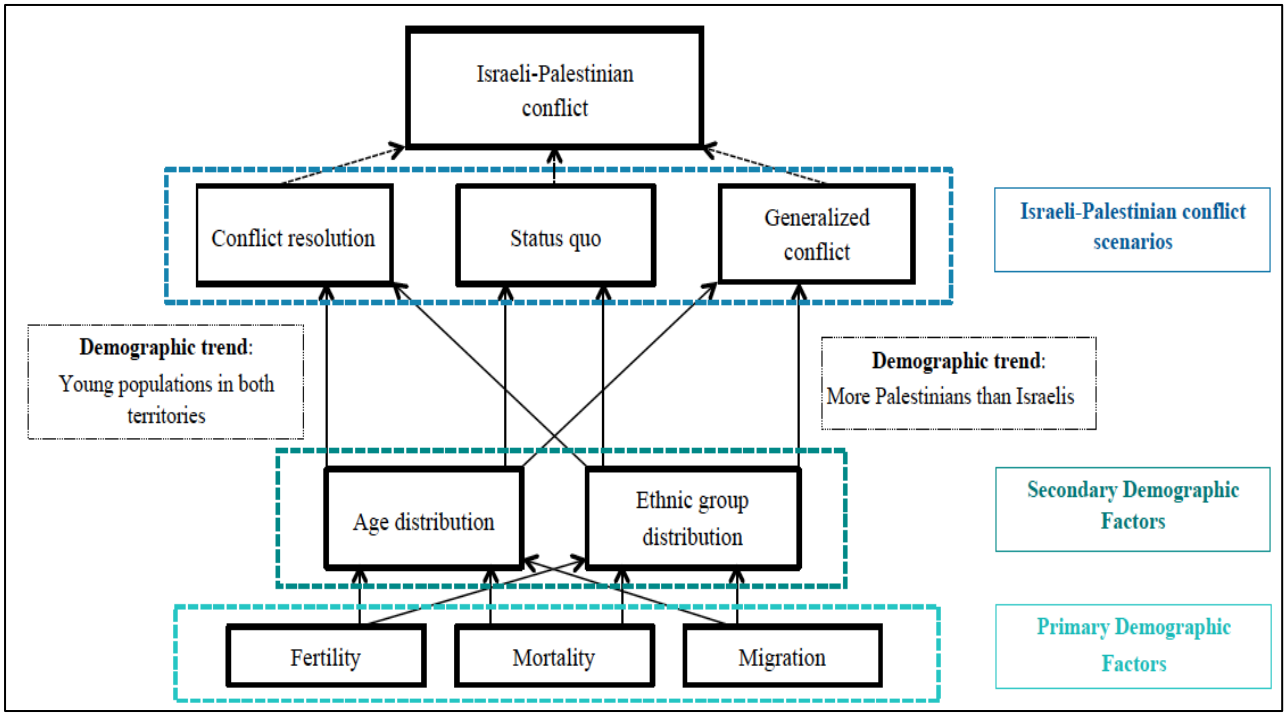


Figure 32: Demographic Impact Model

Within the scope of our paper, we define 1) *Primary Demographic Factors* as a set of factors including Fertility, Mortality and Migration 2) *Secondary Demographic Factors* as a set of factors comprising Age Distribution and Ethnic Group Distribution, and 3) *Demography* as the addition of Primary and Secondary Demographic Factors. Moreover, we define the Israeli-Palestinian conflict as the struggle between Israel and the Palestinian Territories towards the control of the territory ranging from the Mediterranean Sea to the Jordan River, which comprises Israel, the West Bank and the Gaza strip.

2 Analysis of Current Demographic Trends Likely to Impact the Israeli Palestinian Conflict

2.1 Primary Demographic Factors

Primary demographic factors include fertility, mortality and migration as explained by Leuprecht (2007, 2) and represent the core elements of our demographic analysis. According to our theoretical framework, primary demographic factors influence secondary demographic factors (namely age distribution and ethnic group distribution) and hence may have a significant impact on the Israeli Palestinian conflict. For instance, age and ethnic group distribution depend on how many children are born within a specific ethnic group in addition to the mortality rate of the group in question. In our analysis, we will also look at life

expectancy when examining mortality rates and migration, assuming that it is possible to cross borders.

2.1.1 Fertility

In this part, we will mainly discuss figures concerning Crude Birth Rate (CBR) and Total Fertility Rate (TFR) of both regions in the last decade. For reasons of comparability of death rates we will mainly concentrate on the United Nations Department of Economic and Social Affairs (UNDESA, 2014) definition of Crude Birth Rate, as the "number of births over a given period divided by the person-years lived by the population over that period, and expressed as average annual number of births per 1000 population".

We observe a continuous declining trend in the Palestinian Territories crude birth rates over the last decade, while the trend for Israel is more stable (see Figure 2). Israel's crude birth rate increased notably in the 2007-2008 period, whereas the crude birth rate in the West Bank decreased from 31 to 26 over the same period, although the declining trend already began before 2008 and continued after (Index Mundi, 2014). Interestingly, both the US Census Bureau (19 versus 28) and the World Bank (22 versus 31) show a CBR difference of nine births between Israel and the Palestinian Territories for 2012. Despite variations in degrees between the figures obtained from Index Mundi (2014) and the Palestinian Central Bureau of Statistics (PCBS) (2014), we can observe that the crude birth rate is much more higher in the Gaza strip (Index Mundi: 34, PCBS: 37) than in the West Bank (Index Mundi: 24, PCBS: 30).

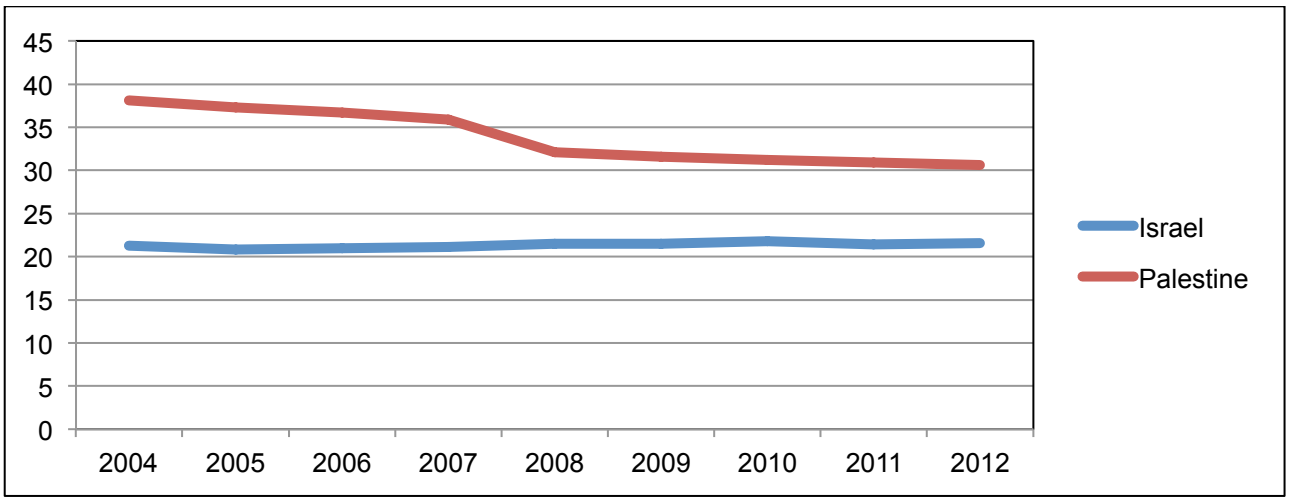


Figure 33: Crude Birth Rate in Israel and in the Palestinian Territories (Word Bank, 2014)

As defined by UNDESA (2014), total fertility rate (TFR) consists of "the average number of children a hypothetical cohort of women would have at the end of their reproductive period (expressed as children per woman) if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality". According to Index Mundi (2014), total fertility rate is a more direct measure of the level of fertility than crude birth rate,

since it refers to births per woman, thus showing the potential for population change in the country. Thus, when looking at total fertility rates both in Israel and the Palestinian Territories, we observe that Palestinian TFR lies well above Israeli TFR, though it declined over the last decade (see Figure 3). In 2012, Palestinian women had on average 1.1 children more than their Israeli counterpart, which represents a total of nine additional children per 1000 population. When looking at Israel, the World Bank (2014) estimates total fertility rate to situate between 2.6 and 3 children in 2012, in comparison with average figures contained between 3.7 and 4.1 in the Palestinian Territories. To conclude, we observe that Israel shows a steady and stable situation towards fertility rate whereas the Palestinian Territories copes with a significant decline of fertility rate over the last decade (see Figure 3).

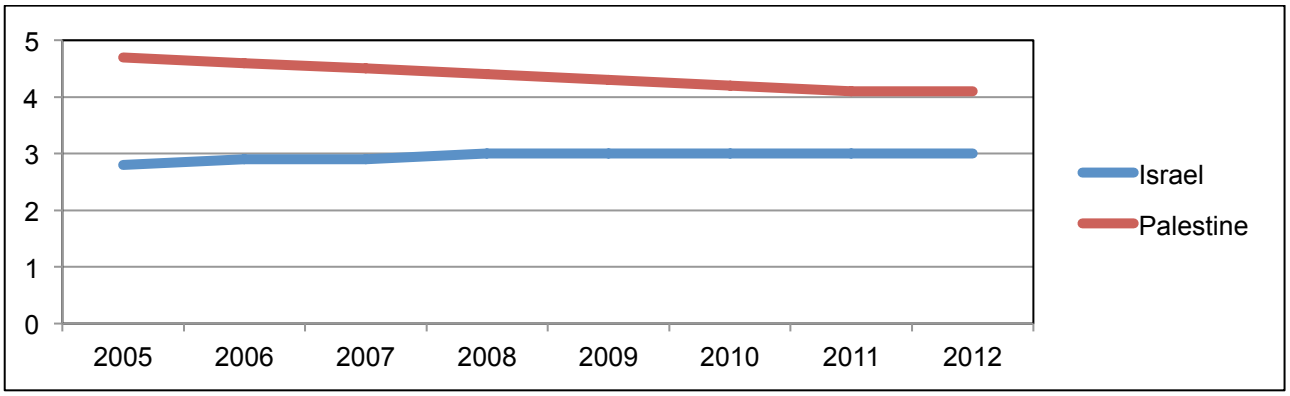


Figure 34: Total Fertility Rate in Israel and in the Palestinian Territories (World Bank, 2014)

2.1.2 Mortality

Infant mortality (the probability to die before the age of 1), child mortality (probability of a 0 to 5 years old child to die), life expectancy at birth, maternal mortality and traffic mortality are different manners to examine mortality rate. A good way to compare mortality and fertility rate is to make a comparison of crude birth rates (CBR) with crude death rates (CDR), that is "the number of deaths over a given period divided by the person-years lived by the population over that period, expressed as an average number of deaths per 1000 population" (UNDESA, 2014). In Israel, the crude death rate has been steadily declining for more than twenty years, with CDR figures higher among Israeli men than Israeli women. Nonetheless, both Israeli male and female CDR figures have been converging since 1995 to reach a ratio of 5.2 deaths per 1000 population in 2013 (CBS, 2014).

As for the Palestinian Territories, the crude death rate amounted 3.8 on average in 2013, with variations between the Gaza strip (3.7) and the West Bank (4), but consistently lower than the Israeli level (PCBS, 2013). Figure 4 illustrates the continuous decline of crude death rate in the Palestinian Territories over the last decade, especially from 2006 to 2009, with a consistent difference of around two deaths per 1000 population between Israel and the Palestinian Territories.

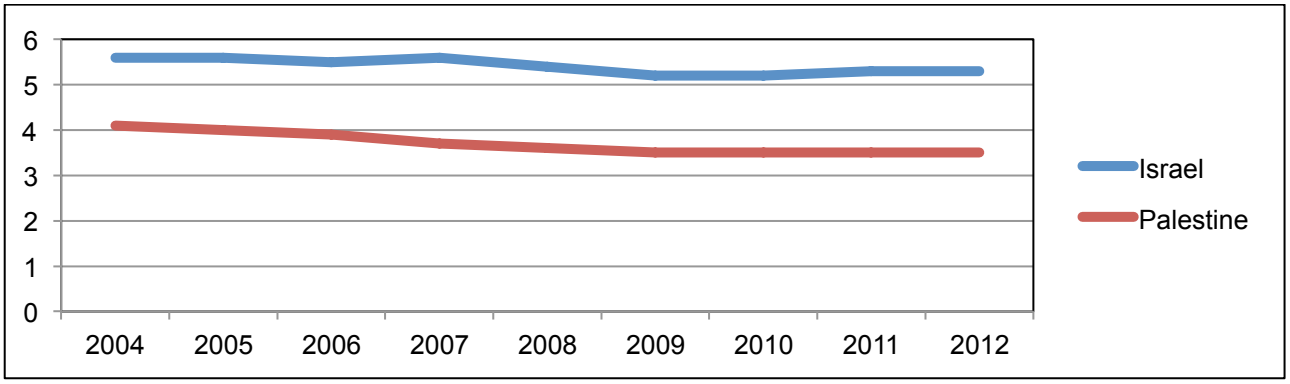


Figure 35: Crude Birth Rate in Israel and in the Palestinian Territories (World Bank, 2014)

Life expectancy at birth describes mortality at any age and "contains the average number of years to be lived by a group of people born in the same year, if mortality at each age remains constant in the future" (Index Mundi, 2014). As Figure 5 shows, Israeli citizens tend to grow approximately nine years older than their Palestinian counterparts. From 2005 to 2012, life expectancy at birth in Israel has risen by 1.5 and by 1.3 years in the Palestinian Territories. A particularly noteworthy finding is the nine years difference in terms of life expectancy between the two regions, seeing that they are neighbours with relatively similar health technologies.

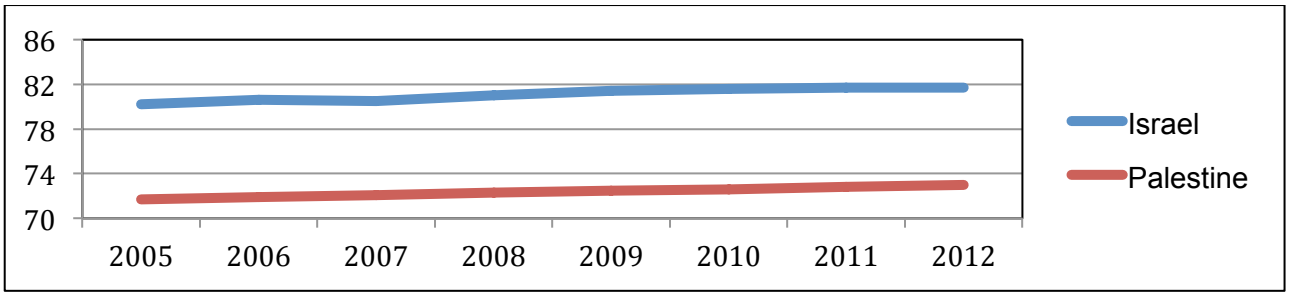


Figure 36: Life Expectancy at Birth in Israel and in the Palestinian Territories (World Bank, 2014)

2.1.3 Migration

Migration has played an important role in the modern history of Israel, as well as for the Palestinian people. After its independence in 1948 and until 1951, the Israeli population almost doubled to reach 1.2 million inhabitants, with around 300'000 Jews who fled from World War II, while another 300'000 Jews who fled persecution from Arab countries in the Near East. The "Law of Return", instituted in 1950, granted every Jew the right to immigrate and become a citizen of Israel. Jewish immigration from North Africa increased along with rising tensions between Israel and Arab states in the region, in addition to repeated immigration waves in 1984 and 1991 (each accounting for more than 22'000 Jewish immigrants). Yet, the largest immigration wave took place after the dissolution of the Soviet Union in 1991, when around 900'000 Jews immigrated to Israel. Since 1948, Jewish immigration has driven much of the country's demographic growth with the former USSR Jewish population accounting for 49% of the total Jewish immigration. Yet, since 1990,

Jewish immigration has considerably slowed down while Jewish emigration from Israel is on the increase (Migration Policy Institute, 2005).

On the Palestinian side, the first Israeli-Arab War of 1948 lead to more than 700'000 Palestinian refugees fleeing Israel to the West Bank, the Gaza strip or contiguous countries such as Lebanon, Syria or Jordan (Dumper, 2006). The United Nations Relief and Works Agency (UNRWA) estimates that by counting the descendants, the Palestinian refugees amount to more than 5 million people in 2013 dispersed between Jordan (hosting 42% of the Palestinian refugees), Gaza (hosting 23% of the Palestinian refugees) and the West Bank (16% of the Palestinian refugees).

If we look at current migratory figures, we observe that net migration calculated by "subtracting the number of emigrants from the number of immigrants over a period of time" (UNDESA, 2014) amounted 20'0000 in 2013 (CBS, 2014, 116). On the other side, the Palestinian Territories saw a negative net migration rate (more people leaving than entering) of around 1400 people from 2005 to 2009. According to the Migration Policy Center (2014), new waves of outward flows among young and well-educated people to Arab countries augmented in the 2000s following from the political impasse and the worsening of both security and socio-economic conditions in the Palestinian Territories.

2.2 Secondary Demographic Factors

Based on our theoretical framework, we define "Age Distribution" and "Ethnic Group Composition" as the two secondary demographic factors, which are generally greatly influenced by primary factors such as fertility, mortality and migration. Secondary demographic factors gained a great importance since Leuprecht (2007, 6) claimed that the probability of internal conflict and violence amongst ethnic groups increases when an ethnic group in a multinational entity is (1) politically disadvantaged (2) demographically substantial but not majoritarian and (3) has a younger population structure than the majority. The following section will examine the assumptions (2) and (3) in relation to the territories of Israel and Palestine.

2.2.1 Ethnic Group Composition

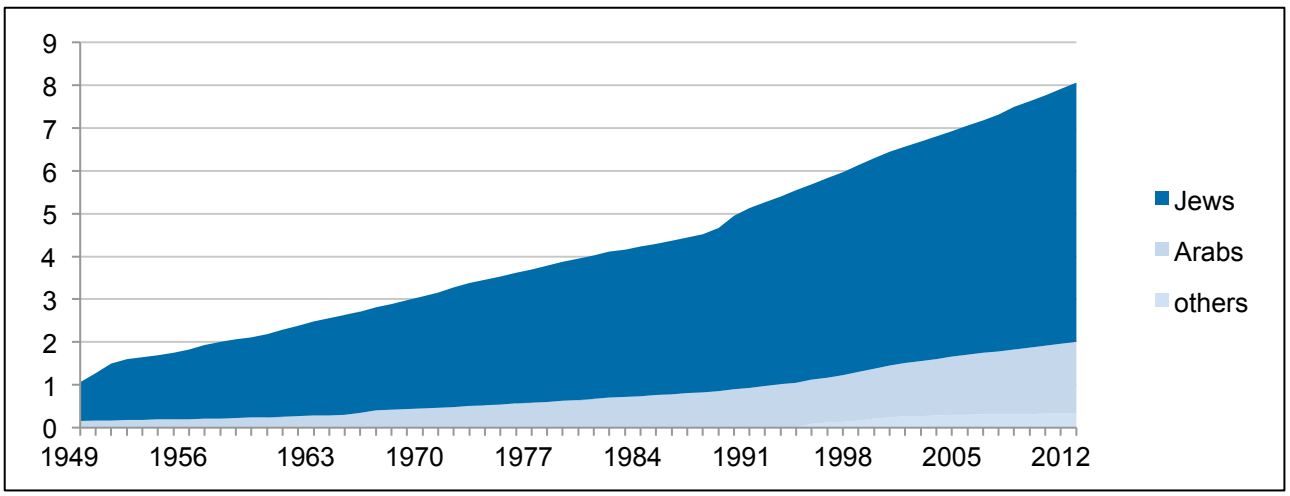
In this section, we will investigate the demographic substance of ethnic groups in both Israel and the Palestinian Territories, as ethnic group composition seems to be one of the most important factor that may impact the current conflict. Therefore, it will represent one of the baseline for the impact scenario in the subsequent chapter.

Two major ethnic groups populate the land ranging from the Mediterranean Sea to the Jordan River: Jews and Palestinian Arabs. These two ethnic groups sometimes display highly different demographic profiles in terms of age distribution and population growth rates.

However, it is important to note that both groups include several sub-groups that are mainly characterized by adherence to different religious creeds, diverse socio-economic stratifications or territorial concentrations (Dellapergola, 2013, 40). This intra-group heterogeneity may even lead to tensions and conflicts within the major ethnic groups (Dellapergola, 2013, 41). Yet, this paper will only focus on the demographic aspects of ethnic inter-group composition.

gure 37: Evolution of the population in Israel (CBS, 2014)

As mentioned before, 12.2 million inhabitants lived in the territory comprised of Israel, the West Bank and the Gaza strip in 2012, with 8 million being Israeli residents and 4.2 million living in the West Bank or the Gaza strip. As visualized in Figure 6, the number of Israeli residents has significantly grown since the independence of Israel in 1948.



In order to analyse the composition of ethnic groups we have to distinguish between Israel, the West Bank and the Gaza strip. Around 75.1% of Jews live in Israel, beside 21.2% Israeli Arabs and 3.7% of “others”, mainly foreign workers, refugees or non-Jewish relatives (see Table 1). Around 83% of Palestinian Arabs and 17% of Jews live in the West Bank (see Table 1). Finally, an overwhelming majority of Palestinian Arabs live in the Gaza strip (see Table 1). The sum of all these figures results in a total of 52% Jews in the entire region completed by 45% Arabs and 3% others (see Table 1), which reveals that Jews still represent the major ethnic group in the region.

What is even more interesting is the predicted development of these figures. In this respect, we analysed the growth rates of the corresponding ethnical groups. Growth rates are composed of natural increase (birth less death) and migration balance (CBS, 2014, 32). A closer look at these growth rates suggests a significant increase of the Arab population. Interestingly, figures show a similar trend not only within Israel but also in the entire region, where the growth rate of the Arab population exceeds those of the Jewish population (see Table 1).

Israel	Absolute	Portion	Current growth rate

Jews	6'052'000	75%	1.7%
Arabs	1'665'200	21%	2.3%
Others	342'300	4%	2.7%
Total	8'059'500	100%	1.9%

West Bank & Gaza	Absolute	Portion	Current growth rate
Jews	374'500	9%	4.0%
Arabs	3'795'000	91%	2.8%
Total	4'169'500	100%	3.0%

Israel, West Bank & Gaza	Absolute	Portion	Current growth rate
Jews	6'426'500	52%	1.8%
Arabs	5'460'200	45%	2.7%
Others	342'300	3%	2.7%
Total	12'229'000	100%	2.3%

Table 3: 2013 Mid-Year Populations in Israel, the West Bank and the Gaza strip (World Bank, 2014a, 2014b; CIA, 2014a, 2014b, 2014c; CBS, 2014)

In Table 2, we further examine what is the growth rate made of. Again, a closer look reveals that the Jewish growth rate in Israel has been substantially more influenced by migration in the past than today (CBS, 2014, 116). On the other hand, the Arab growth rate has always been mainly composed of fertility and mortality rates. The portion of Arab natural increase still highly exceeds Jewish rates at the moment (CBS, 2014, 116). Besides, the considerable growth rate of Jewish settlers in West Bank more than double the aggregated growth rate of Israel (see Table 1). Yet, the summarised growth rates in the bottom table (see Table 1) indicate the basic features of the coming trend, which imply a continuous diminution of the Jewish population in comparison with the aggregate level. According to Dellapergola (2010, 236) by 2020 the aggregated percentage of Jews in the region would decline to reach 49%, and 44% by 2030. This would imply a significant diminution of the Jewish population of more than 11% over a period of 30 years, namely from 2000 to 2030 (see Figure 7).

Yet, such predictions rely on the assumptions that 1) the balance of international migrations will continue to be negligible with little impact on demography 2) fertility rates remain stable amongst Jews but decline amongst Arabs (with a complete convergence expected by 2050) and, 3) mortality rate will decline amongst all ethnic groups (Dellapergola, 2010, 235).

Jews	Total	Natural	In %	Migration	In %
1996-2008	1'278'900	856'400	66.96%	426'100	33.32%
2009-2013	532'000	454'200	85.38%	84'300	15.85%

2012	110'500	92'300	83.53%	18'800	17.01%
2013	113'900	94'400	82.88%	20'000	17.56%
Arabs					
1996-2008	482'700	461'900	95.69%	17'400	3.60%
2009-2013	183'300	177'600	96.89%	4'800	2.62%
2012	37'400	35'900	95.99%	1'000	2.67%
2013	36'100	34'700	96.12%	900	2.49%

Table 4: Sources of population growth in Israel (adapted from CBS, 2014, 116)

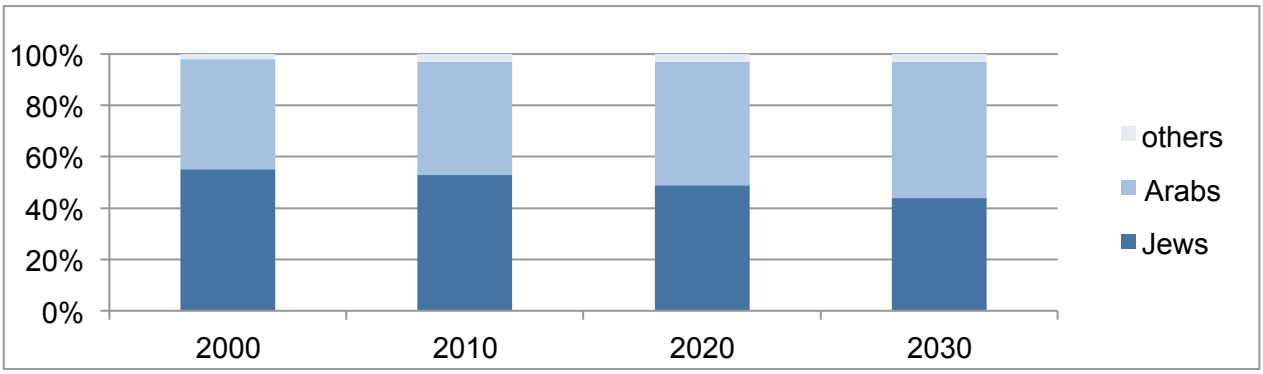


Figure 38: Predicted composition of ethnic groups in Israel and the Palestinian Territories (adapted from Dellapergola, 2013, 236)

Another interesting fact confirming the current demographic trend concerns the disengagement of Israel from Gaza in 2005, automatically increasing the fraction of Jews in Israel and the West Bank to 63% (see Table 3). However, Dellapergola (2010, 236) estimates that this fraction will decline to 54% in 2030, which indicates that the demographic composition of Jews and Arabs in Israel and the West Bank (but without the Gaza strip) would look like the demographic composition of Gaza in 2000 before the Israeli disengagement (see Table 3). In fact, it signifies that it would take only about 30 years to consume the entire demographic surplus that resulted from the 2005 disengagement of Gaza (Dellapergola, 2010, 235). These findings indicate major changes in the future ethnic group composition of the region. Indeed, should current trends continue as predicted in the future, the Jewish population is likely to lose its major position in the region (see Figure 7).

Year	Israel with West Bank and Gaza	Israel with West Bank, no Gaza
2000	55%	63%
2010	53%	62%
2020	49%	58%
2030	44%	54%

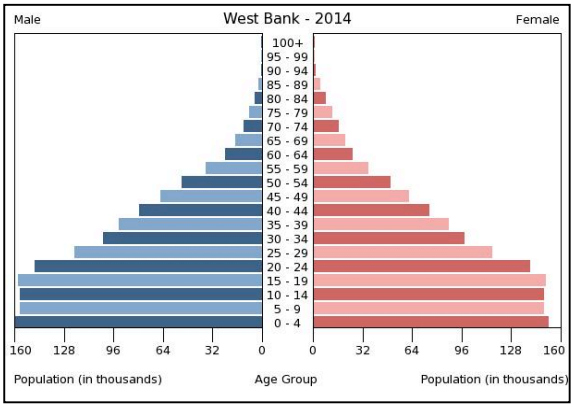
Table 5: Comparison of ethnic group composition with and without the Gaza strip (adapted from Dellapergola, 2013, 236)

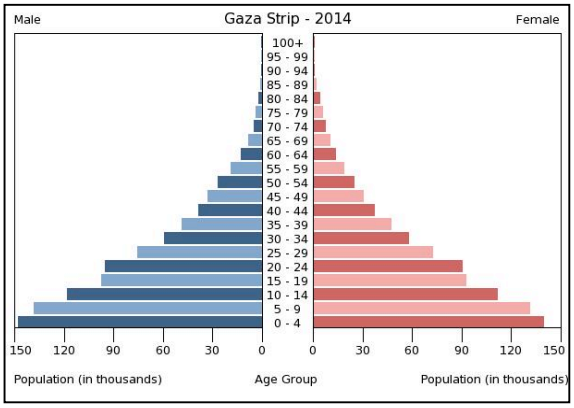
2.2.2 Age Distribution

An additional demographic factor that is influenced by primary demographic factors is the country's age distribution. Leuprecht (2007, 6) characterises a young and sizable population structure of a minority group as a driver for internal conflicts and violence since it leads to a more rapid population growth than the majority group, unless migration interferes to slow such a population growth. On the other hand, if the population structure of the minority grows older, the tendency towards violence and conflict and violence would diminish (Leuprecht, 2007, 7).

The figures 8 and 9 show that the youngest age group represents the most populous group in both Israel, the West Bank and the Gaza Strip. Yet, some differences appear between Israel and the Palestinian Territories: whereas the majority of the population is below 24 years old in the West Bank and the Gaza strip (see Figure 8), Israel has a high fraction of

Figure 39: Age Pyramid of the West Bank, 2014 and the Gaza Strip, 2014





middle aged people between 25 and 64 years of age, which nearly represents 50% of the population (CIA, 2014a, 2014b, 2014c).

These differences amongst the territories are due to diverse primary demographic factors between ethnic groups. Indeed, the younger Arab population is further confirmed by a closer investigation of the age data of Israel, where data show significant differences in age distribution amongst the two major ethnic groups in Israel (see Figure 9).

gure 41: Ethnic Group Distribution in Israel within the different age groups (adapted from CBS, 2014, 92-93)

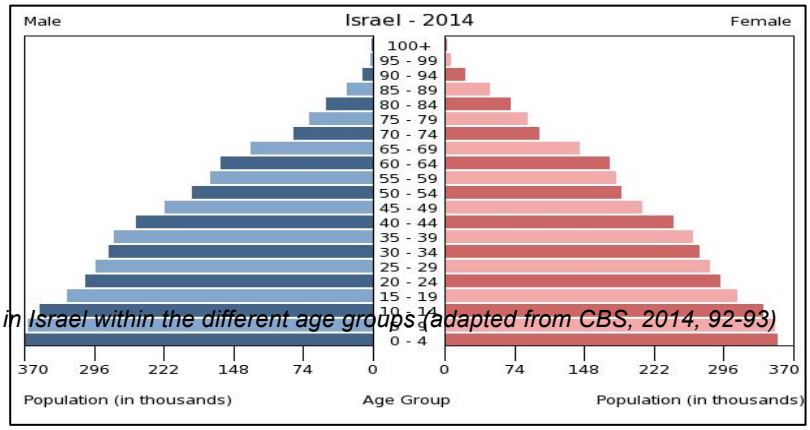
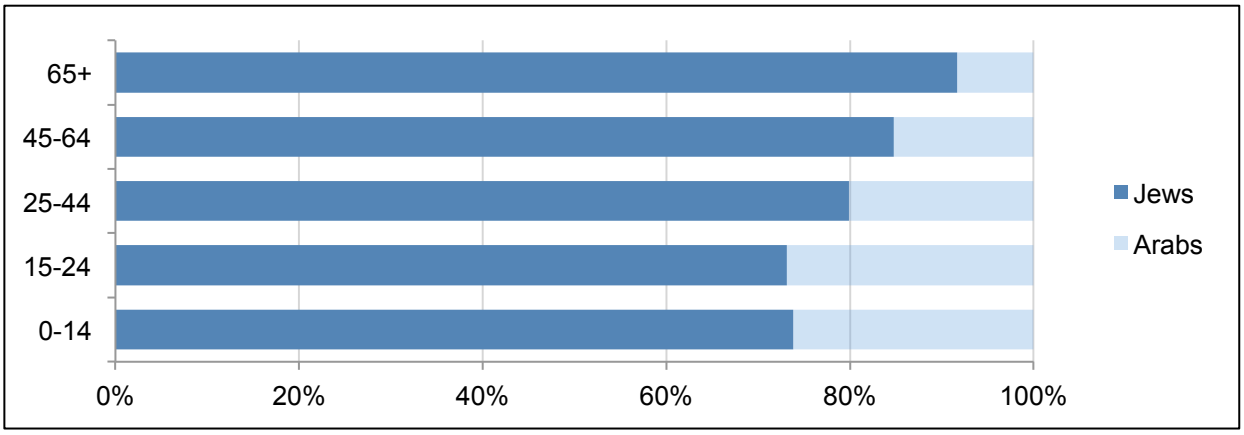


Figure 40: Israel Age Pyramid (CIA, 2014a)

Interestingly, whereas Jews represent 92% of all people above 65 years, they only represent 71% of the people below 14 years of age (CBS, 2014: p. 93). Thus, the younger the age, the lower is the share of Jews out of the total (see Figure 10).



Finally, when assuming a constant fertility rate, demographic predictions reveal that the age pyramid in Israel is expected to remain similar up to 2050 (see Figure 11).

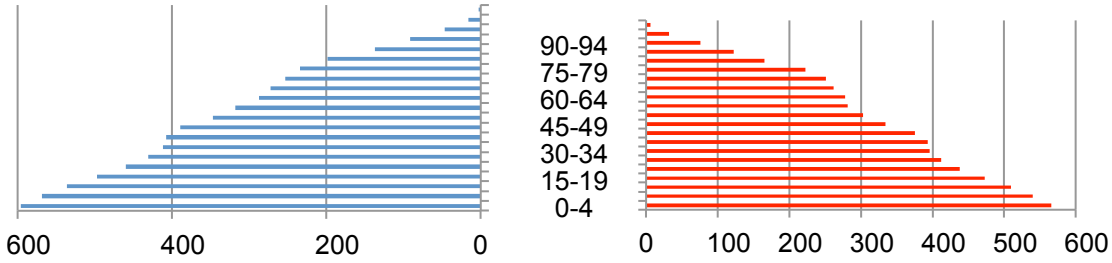


Figure 42: Population Pyramid of Israel for 2050 (in thousands), adapted from United Nations (2014)

3 Conclusion and Impact Scenarios

Based on our research, we found two major trends proceeding from the analysis of ethnic group composition and age distribution in Israel and the Palestinian Territories. For ethnic group composition, the main demographic trend is that (1) ***due to higher population growth, the Arab population is likely to exceed the Jewish population in the future***. For age distribution, the main demographic trend is that (2) ***young people below 24 years of age represent the largest age group in both Israel and the Palestinian Territories***. We will now return to our Demographic Impact Model and discuss how these two tendencies may impact the conflict. In our model, the Israeli-Palestinian conflict is likely to take the form of three conflict scenarios. In this respect, we will quickly delineate each of the three conflict scenarios:

Conflict Resolution: In this scenario, Israel and the Palestinian Territories reach a permanent peace agreement that is supported by both parties, towards all or most of the conflict issues, and which provides a sustainable reconciliation process.

Status Quo: In this scenario, despite mediation efforts and a policy of small steps, the conflict settlement process is at a standstill with both parties remaining inflexible towards fundamental problems, in a situation of latent conflict.

Generalized conflict: In this scenario, the latent conflict turns into a generalized conflict between Israel and the Palestinian Territories, threatening to transform into a regional conflict in the Near East.

The two subsequent sections examine to what extent can the two major demographic trends result in one of the scenarios.

3.1 Arab population to exceed Jewish population

While the Israeli government is careful about a growing Arab population both in Israel and in the Palestinian Territories, the Palestinian Authority is well aware that demography currently works in its favour, and may modify the balance of power with Israel in the future. With demography likely to work to the disadvantage of Israel in the future, we will now examine how a larger Arab population (in comparison with the Jewish population) may impact 1) conflict resolution 2) status quo, and 3) generalized conflict.

1. Conflict Resolution: If Israel wants to guarantee identic democratic rights to Israeli Arabs and Israeli Jews, and keep an Israeli Jewish government at the head of the state, it will probably have to redesign its territorial strategy towards the West Bank, for instance on the basis of the 2005 disengagement of Gaza (Dellapergola, 2010, 235). On the other hand, such strategic effort may favor a two-state solution, as the

Palestinian Authority would see some of its territorial requests taken into account (Miller, 2013).

2. Status Quo: If Israel wants to guarantee identic democratic rights to Israeli Arabs and Israeli Jews, and continue to pursue Israeli Jewish settlements in the West Bank, it will probably face a more powerful Israeli Arab political party in the future, supported by an increasing part of the population (Miller, 2013). On the other hand, the Palestinian Authority will strongly oppose any new Israeli settlement as an obstacle to the peace settlement process in the region, and will push for a better inclusion of Israeli Arabs in the political arena.
3. Generalized Conflict: If Israel wants to extend its Jewish settlements in the West Bank, and ensure that a Jewish government rules the country in the future, it will probably have to limit the democratic rights of Israeli Arabs (Miller, 2013). On the other hand, such restriction could precipitate the latent conflict to spread into a regional conflict with Israeli Jews fighting Israeli Arabs, Palestinian Arabs and possibly other neighboring Arab countries.

3.2 Young demographic majority in Israel and the Palestinian Territories

With young people below 24 years old representing the largest group in both Israel and the Palestinian Territories, we will now examine how this trend may impact 1) conflict resolution 2) status quo, and 3) generalized conflict.

1. Conflict Resolution: In order to resolve a long-term conflict, young people in Israel and the Palestinian Territories will have an important role to play to foster peace, notably through common inter-ethnic working projects (Masri, 2012). The development of inter-ethnic working projects, such as “Peace It Together” or the “East-West Divan Orchestra” illustrate how young generations of Israelis and Palestinians could meet their counterparts on equal terms, discuss the conflict from a different point of view and “humanize” it, three preconditions for any conflict resolution in the region.
2. Status Quo: Since both Israel and the Palestinian Territories will have a larger amount of young people in the future, this is likely to increase the size of the armed forces on both sizes, which might eventually result in a situation of status quo (NB: military technology is not taken into account).
3. Generalized Conflict: Since young Israeli Arabs (minority group) are growing faster than Israeli Jewish (majority group), it may result in violence and internal conflict (Leuprecht, 2007, 6) as young Israeli Arabs may reject the rules of the biggest ethnic group: Israeli Jews. This may first lead to an internal conflict within ethnic

communities in Israel, before possibly spreading to the Palestinian Territories and transform into a regional conflict.

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Universität St.Gallen

Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

-

Sub-Saharan Africa:
How to design a composite indicator that reflects the demographic risk Sub-Saharan African countries are facing?

Lecturer: Dr. med. Hans Groth, MBA

Submitted by:
Matthias Becker
Katharina Nowak
Benedict Schneider

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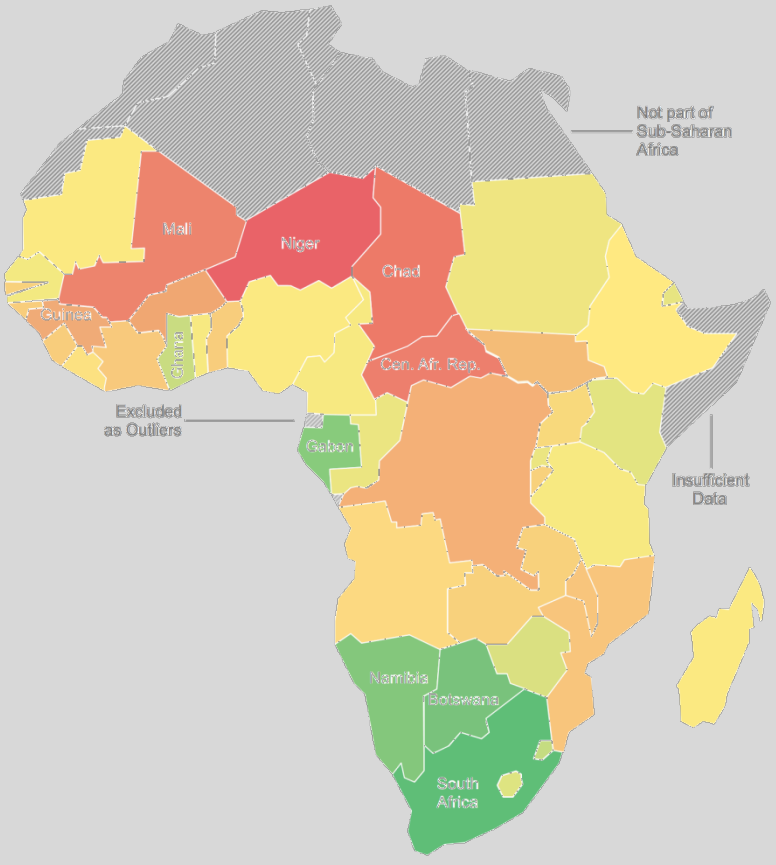
Figure 43: Composite Indicator Ranking and Visualization (own illustration)

1. Executive Summary

Demographic change is a crucial topic for both developed and developing countries. While Europe and several other high-income regions face the problem of a shrinking population and increased ageing, developing economies in Sub-Saharan Africa are fighting the exact opposite. Extremely high fertility rates, a very young population, and low per capita income lead to many problems that are extensively explored in current literature. The aim of this paper, however, was to take a quantitative approach to the topic and make the demographic risks between Sub-Saharan African countries comparable.

Our method consisted of gathering multiple quantitative factors for the five main topics of economic development, population prospects, education system, health care system, and infrastructure development. These factors were weighted according to their importance in influencing the demographic risk of a country, and together, built the foundation for the assignment of a composite demographic risk indicator for each individual nation in Sub-Saharan Africa. The results of our study are presented below, both in a numerical and a visual format. The table shows a country's rank, the name of the respective country, as well as the composite demographic risk indicator. The same results are presented on the right, as a heat map of all Sub-Saharan African countries, with green highlighting the lowest risk regions and red marking the high-risk nations.

1	South Africa	0.74
2	Botswana	0.68
3	Gabon	0.64
4	Namibia	0.66
5	Swaziland	0.49
6	Ghana	0.48
7	Zimbabwe	0.43
8	Lesotho	0.42
9	Kenya	0.41
10	Congo, Rep.	0.40
11	Eritrea	0.40
12	Rwanda	0.39
13	Comoros	0.38
14	Sudan	0.38
15	Senegal	0.37
16	Togo	0.36
17	Cameroon	0.35
18	Tanzania	0.35
19	Madagascar	0.35
20	Mauritania	0.35
21	Ethiopia	0.34
22	Nigeria	0.34
23	Liberia	0.33
24	Angola	0.32
25	Zambia	0.31
26	Uganda	0.31
27	Burundi	0.31
28	Gambia, The	0.30
29	Benin	0.30
30	Guinea-Bissau	0.30
31	Sierra Leone	0.30
32	Cote d'Ivoire	0.29
33	Malawi	0.29
34	Mozambique	0.28
35	South Sudan	0.27
36	Congo, Dem. Rep.	0.26
37	Burkina Faso	0.24
38	Guinea	0.25
39	Mali	0.19
40	Central African Rep.	0.18
41	Chad	0.17
42	Niger	0.14



2. Introduction

2.1. Introduction to the Topic of Demographic Change

Global demographic change is omnipresent. The social and economic effects of changing population growth and age distribution are expected to gain even more importance in the future. The world population is forecasted to grow from 7.2 billion in 2014 to 9.7 billion in 2050, bringing along both challenges as well as opportunities (Population Reference Bureau, 2014). While Western Europe and the US face problems due to stagnating fertility rates and an aging workforce, Africa's challenges are very different. The continent's population is forecasted to more than double from 1.1 billion in 2014 to 2.4 billion in 2050, making it the fastest growing continent in the world (Population Reference Bureau, 2014). Today, the Sub-Saharan African (SSA) countries are characterized by the highest fertility rates worldwide, boosting their population and workforce to become one of the world's largest in the future. Despite the economic opportunities triggered by population growth, demographic changes also bring along distinct risks and challenges. With adequate support in the form of public policies, they optimally result in a larger workforce and thus increased standard of living. Without appropriate measures, however, the development can reinforce the high unemployment rates, inadequate health care, and low education standards.

2.2. Course of Investigation

This paper aims at examining factors of demographic risk and opportunities for SSA as a region, and additionally provides a detailed indicator that differentiates between individual low- and high-risk countries. The applied approach creates a better understanding of the essential opportunities and threats that demographic change entails for the economic prospects of SSA countries. The first part serves as an introduction to the most important factors that will influence SSA in the future, while the composite indicator and the resulting ranking in the second part takes the analysis to the next level of detail. Consequently, the resulting ranking gives an overview of the status quo in 2013 and additionally serves as an indication for the future development of individual states. Furthermore, based on the development of successful economies in the region, guidance for public policies can be derived. Due to the differentiation between high- and low-performing economies, the indicator serves as a solid basis for due diligence. However, in order to make a sustainable and more thorough investment decision, this work needs to be supplemented by deeper analysis covering the political and regulatory details, which differ from country to country.

2.3. Introduction to Sub-Saharan Africa

Figure 2: Sub-Saharan Africa, World Bank

Sub-Saharan Africa includes 48 countries with highly diverse economic and social backgrounds (World Bank 2011). The region has historically always ranked among the poorest in the world with Gross Domestic Product (GDP) per capita between US$226.4 in Malawi and US$20,572.34 in Equatorial Guinea (World Bank, 2014). This discrepancy shows the characteristic heterogeneity across higher- and lower-developed SSA countries. The pattern repeats when looking at education and health, as demonstrated by literacy rates ranging from 23.52% in Niger to 99.06% in the Seychelles and child mortality rates from 107.20 per 1000 children in Sierra Leone to 12.20 per 1000 children in the Seychelles. Despite the fact that some countries are still facing severe social, political, and economic problems, the overall GDP per capita in Sub-Saharan Africa is growing on average by 5% per year (World Bank, 2013). Even though general outlooks are promising “with the absolute number of people living on less than US$1.25 a day falling by about 9 million for the first time in history” (World Bank, 2013, p.vii) in 2013, human development indexes for SSA are still the lowest in the world, while child mortality rates are extremely high.

3. Method

In order to make future demographic risks and challenges of the individual countries comparable, a composite indicator has been developed that takes different factors into account and weighs them according to their importance. Indicators become increasingly important and are more frequently used than ever before, especially concerning global governance (Davis, Fisher, Kingsbury, Merry, 2012).

To understand the rationale behind using such an indicator for evaluating risks and challenges, a definition of an indicator has to be presented. Literature suggests that there is no commonly agreed upon definition of the term indicator. In our paper we chose a definition in accordance with the one proposed by Davis and Kingsbury (2011), who describe an indicator as "a collection of named, rank-ordered, simplified and processed data that purports to represent the past or projected performance of different units. An indicator simplifies and processes data about a named social phenomenon in a way that makes it possible to compare and evaluate units such as countries, communities, organizations, or individuals." With the purpose of creating a successful indicator, we considered it important to take the target audience of our study into account (Brown, 2009; Iasiallo, 2008). In this case there is an interest of the general public, the governments of specific countries, and institutions like the EU and the OECD. In accordance with literature published on the subject of successful and useful indicator development, as well as the practice guidelines developed by the OECD, an indicator has to fulfill the following four characteristics: (1) Transparency; (2) Fit, relevance and meaningfulness for the specific target audience; (3) Ease of use and interpretation; (4) Data consistency and credibility over time (Bonafini, 2013; Brown, 2009; Cash et al., 2002; Davis et al., 2012; Hák & Janoušková, 2012; Kilpeläinen,and Suzuki, 2014; Merry, 2011, World Bank, 2011).

3.1. Transparency

In order to ensure transparency all the data we have used while calculating the indicator are publicly available and can be freely retrieved from the Internet mainly from databases like the World Bank (World Bank, 2014). Additionally, we aim at complete transparency and replicability by describing our methodology as well as our factor selection and weighting approach thoroughly.

3.2. Fit, Relevance, and Meaningfulness

With a clearly defined target audience, the indicator aims at delivering knowledge and insights in a focussed way by only taking highly relevant factors into account. Audience fit, as proposed by Hák and Janoušková (2012), is achieved by specifically focusing on factors that mirror potential demographic and economic risks. Our compositeed indicator will be relevant, as it can be influenced by policy measures, and is therefore meaningful by and to the target audience.

3.3. Ease of Use and Interpretation

Furthermore, a clear and easy interpretation will be provided by this paper with the clustering of countries and the possibility to compare the individual scores to the overall score of SSA. Therefore, the ease of use of our indicator as well as the understandability to the general public is assured.

3.4. Data Consistency and Credibility

The indicator is calculated consistently, taking the same factors, data sources, types of forecasts, and databases into account. Due to these facts, as well as the long time period, the indicator is consistent with the definition of Davis et al. (2012) and Hák & Janoušková (2012). The numerical data and forecasts were continuously cross-checked with other publicly available data such as competing databases, newspaper articles, and recently published research. The indicator thus fulfills the requirements to be credible and legitimate.

4. Sub-Saharan Africa as a Continent

As previously explored, the most urgent and severe demographic challenges are nowadays occurring in SSA. Not only are 35 of the 43 least developed countries located in the region, but SSA is additionally characterized by the world's highest fertility rates of up to 7.6 births per woman (HDI, 2014; World Bank, 2014). In this part, we will analyze the influence of the most important factors from an economic, population, health, education, and infrastructure perspective on a country's exposure to demographic risk. The subsequent part will examine

the SSA countries in more detail and develop a composite demographic risk indicator to rank these individual nations.

4.1. Economy

4.1.1. GDP per Capita

The GDP per capita is one of the most widely used indicators of a country's economic performance and approximates the average living standard and the general economic well-being of the population. The indicator is calculated by dividing the value of all produced goods and services of a country by the average population of the same year. Although GDP per capita does not address issues like equal distribution of GDP among citizens, it represents a good initial approach to examining a population's per capita income (World Bank, 2014).

SSA countries have historically always ranked substantially lower than most other parts of the world with regards to income. In 2013, the worldwide average GDP per capita of US$10,500 was more than six times as high as the SSA average of US$2,613. While there are notable exceptions like island nations (Seychelles and Mauritius) or resource-rich countries (Equatorial Guinea) with a GDP per capita of US$10,000 to US$20,000, most nations in SSA are still characterized by a GDP per capita of less than US$1,000 (World Bank, 2014).

Our assessment of demographic risk includes GDP per capita, since more wealthy countries are less exposed to the risks resulting from demographic changes. They have more resources available that allow the government to react to changing demographic trends with public policies and actively minimize the impact of negative developments. An increasing population, for example, requires higher investments in education and health, in order to translate this development into a demographic dividend. For countries with more severe budgetary restrictions, an increasing population poses a greater threat (Sipple et al., 2011). We decided to weight GDP per capita with 3 out of 4, as it represents one of the most important indicators of a country's exposure to demographic risk.

4.1.2. GDP Growth

While sustained growth in GDP is essential for every country worldwide, it is even more important for SSA countries. Their high fertility rates require an even higher growth in order to increase or just maintain the respective country's current level of economic performance and living standard (World Bank, 2014).

SSA countries' GDP growth rates range from extremely high levels in South Sudan of up to 24.4%, to devastating declines in the Central African Republic of up to 36%. Compared to other countries worldwide, the growth rates for most SSA countries are above average and range between 2.5% and 7%. While this strong growth is definitely positive, most nations' economic development is additionally characterized by high volatility, due to factors like diseases, famines, political disruptions, or unfavorable public policies (Sipple et al., 2011). These fluctuations results in a low explanatory power if only a single year is used in a comparison of economic growth. If the average over the previous three years is used, the growth rates across all SSA countries give a much more homogenous picture with a range between -12% and 16% and an average yearly growth of 4.4%. GDP growth rates provide a solid basis for forecasting a country's future economic development and therefore it's hazard of demographic changes. The weighing of GDP growth in the composite indicator was set to 3 out of 4.

4.2. Population

4.2.1. Fertility Rate

According to UNICEF (2014), a country's fertility rate measures the average number of children that are born per woman over her lifetime. While most European countries struggle to maintain their population size, as their fertility rates fall below the replacement rate of 2.1, some SSA countries experience fertility rates of up to 7.57. On average, a woman in SSA gives birth to 4.75 children in her lifetime, which is far above even the regional replacement rate of roughly 2.75 (World Bank, 2014). If Niger's fertility rate would remain on its current level of 7.57, for example, the country's population would double within less than 20 years (Sipple et al., 2011).

In the context of demographic challenges, the fertility rate is of great importance, as it does not only show a country's potential for the future, but also it's greatest challenges. On the one hand, an above-replacement fertility rate represents a promising indicator for future growth of a country's population and thus its economic prosperity. On the other hand, an extremely high fertility like in most SSA countries results in substantial pressure on a country's society, including education, health care systems, and resources. Successful economies that started in a similar situation like the "Asian Tigers", first experienced a reduction of their fertility rate, and only subsequently a rise of their living standards. This development is a result of being able to focus more resources on less individuals and thus to provide them with better education and increased health care (World Bank, 2014).

The development of the fertility rate in SSA countries depends on factors that are difficult to influence, such as social norms or individual preferences, but also on educational aspects, like the promotion of contraceptives, family planning programs, or the general empowerment of women (Sipple et al., 2011). As the fertility rate is crucial for evaluating risks and challenges in SSA it was assigned a weighting of 4 out of 4 in the indicator. The current situation of SSA from an educational perspective in a worldwide context will be examined in the following chapters.

4.2.2. Dependency Ratio

Another crucial factor when examining a region's demographic risk, is the age distribution of its population. Throughout the world, countries are characterized by highly diverse make-ups of their populations, from Japan's and Germany's elderly-dominated societies to SSA's very young populations (World Bank, 2014). The most popular method of displaying a population's age distribution is the so-called population pyramid, which shows the number of persons in each age group in a bar chart. A more relevant, quantitative approach is provided by the dependency ratio, which examines the ratio of under 14 and over 65 year-olds to the rest of the population. This approach assumes that the younger and older population groups are not employed and financially dependent on persons in working age. The dependency ratio therefore shows how many other individuals each 14 to 65 year-old needs to support in theory. In the context of demographic change, this indicator provides valuable insights into the pressure on a country's social systems, as young children require education, while older individuals need increased medical assistance (Tyler & Gopal, 2010). If the dependency ratio of a country's population decreases, more funds become available on a per capita basis. If these funds are invested with the aim of improving education and health care within the general population, the positive developmental effects will reduce SSA countries' exposure to demographic risks.

The dependency ratios in SSA countries are highly diverse and range from an extreme of 110% (110 dependent persons per 100 working-age individuals), down to 40%. The average, however, lies at a relatively high ratio of 85,79% compared to the rest of the world, where dependency ratios average out to be 50% (World Bank, 2014). Due to its great importance, we weighted the dependency ratio with 4 out of 4 during the development of the demographic risk indicator.

4.3. Education

4.3.1. Education Expenses

As examined in the previous chapters, a development focus on the population itself is essential to minimize a country's exposure to demographic risk. Educating people will ensure economic progress and increased living standards through various positive influences. First of all, education makes a nation more attractive for companies, as an educated population is one of the most important prerequisite for sustainable foreign investments. In the case of developing countries, increased education typically also reduces fertility rates and consequently frees financial resources. This positive effect is caused by more empowered women, changing social norms, and higher contraceptive usage (World Bank, 2014). The focus of a nation on educating its population is hence one of the most important factors in determining a region's risk of demographic change and makes the inclusion of educational expenses in the indicator for demographic risk one of the most important elements.

A popular indicator for a country's focus on education is the ratio of its public education spending to its GDP. Since SSA countries are characterized by high discrepancies in GDP, it is more useful to examine absolute values like the educational spending per capita. High per capita spending is assumed to result in a better education and thus a reduced exposure to demographic risks in the future. The spending in SSA ranges from almost US$700 to less than US$5 per capita per year, while the average is about US$100. The average educational spending per capita in developed regions like the EU is significantly higher at about US$1,700 per year. The extreme differences across SSA countries are of great importance and need to be captured in the indicator for demographic risk. Consequently, education investment per capita was assigned a relatively high weight with 3 out of 4.

4.3.2. Literacy Rate

In general, the literacy rate describes what percentage of a population is able to read and write on a basic level (UNICEF, 2014). More relevant for the assessment of demographic risk, is the youth literacy rate, defined as the literate percentage of the population aged 15 to 24. It is one of the most relevant and easily accessible indicators when examining the current status of a country's education. While the previous factor of per capita educational investments assess the outlook for the future, the youth literacy rate focuses more on the educational status quo. Both factors are equally important when trying to evaluate the demographic risk of a region, as it's necessary to include indicators for the current situation as well as for the future outlook. The relevant weight for the computation of the literacy rate was consequently set at 4 out of 4 as well.

Among SSA countries, the youth literacy rate varies widely. While more developed countries like South Africa with 98.88% are close to a perfect literacy rate, other countries show severe problems, with literacy rates falling below 50%. The average rate of 72.36% is relatively low

compared to the worldwide average of over 90% and the EU average of over 99% (World Bank, 2014).

4.4. Health

4.4.1. Health Expenses

Similar to educational expenses, investments into health care provide a great indication of a country's dedication to reduce demographic risks. A healthy population lives a longer and more productive life, as its life expectancy increases and mortality rate decreases. It is especially crucial for the SSA countries, as HIV represents a serious problem in this region. Additionally, investments into the educational system are more sustainable, since individuals are able to benefit from their education for a longer time period. Total health expenditures are again expressed as per capita spending per year.

Total health expenditures vary significantly across the diverse SSA countries from over US$694.18 to as low as US$11.36 per capita per year. The average of US$100.96 compares unfavorably with the worldwide average of US$1,066.15. For the development of the demographic risk indicator, total health investments per capita were weighted with 3 out of 4.

4.4.2. Life Expectancy

Life expectancy describes how long newborn children are expected to live on average given the mortality risks of a certain country (UNICEF, 2014) and thus gives a broad assessment of the quality of a country's health care system. In this context, life expectancy describes the status quo of a country's health care system, while the health expenditures per capita give an outlook into the future. Life expectancy plays a significant role in the mitigation of demographic risk, as it allows the general population to remain part of the working population for a longer time. The assigned weight of life expectancy for the demographic risk indicator was set at 2 out of 4.

Life expectancies are generally low in SSA and range from 45.33 years at birth in Sierra Leone to 64.25 years in Madagascar. The worldwide life expectancy is about 13 years higher than the SSA average of 56.47 years. The reasons for the low average life span include HIV, Malaria, various childhood diseases, and the high risk of maternal death (WHO, 2014).

4.4.3. Mortality Rate

Infant mortality is an essential factor in the mitigation of demographic risks (UNICEF, 2014). Historically, as infant and child mortality rates declined in developed countries, birth rates started to lower as well. High fertility rates in countries with high infant mortality are the result

of parents having a large number of children to make sure that at least some of them reach adulthood. Most social systems in SSA do not provide adequate support for older individuals who are not able to work. With reduced infant mortality and the resulting lower uncertainty, families can consist of fewer member and still enjoy a secured future (Sipple et al., 2011).
Infant mortality in SSA, with 58.24, is slightly higher than the worldwide average of 33.6 deaths per 1000 births, as unsanitary conditions and inadequate maternal support lead to many preventable, early deaths. Developed regions like the EU, however, exhibit a significantly lower mortality rate of below 4. The lowest child mortality among SSA countries can be observed in South Africa with 32.8, while the highest infant mortality exists in Sierra Leone, where 107.2 children die before their first birthday. Infant mortality represent an important factor for assessing demographic risk and is assigned a weight of 2 out of 4.

4.5. Infrastructure

A country's exposure to demographic risk is not only determined by the development of its population or by the state of its educational and health care system. Demographic changes in SSA also require appropriate infrastructure to support an increasing population size and new population compositions. Since reliable statistics regarding infrastructure are very limited, closely correlated statistics were utilized to include these prerequisites in the development of the demographic risk indicator. Statistics of the telecommunication sector were utilized, because they are readily accessible for all SSA countries.
The included infrastructure factors are the percentage of Internet users and the percentage of phone lines in the general population. The state of these two factors is characterized by significant differences across SSA countries. South Africa, for example, has both the highest Internet penetration with 48.9%, as well as the highest percentage of phone lines with 9.16%. Countries like Eritrea or South Sudan, on the other hand, experience an almost non-existent infrastructure in this regard. Since the influence of infrastructure on a demographic risk assessment is limited, the assigned weight is only 1 out of 4.

5. Development of the Demographic Risk Indicator

While the previous part served to give an overview of the relevant factors and their impact to assess risk as well as social and economic opportunities, the quantitative part functions to solve the heterogeneity among the SSA countries. As SSA is constituted of 48 countries with different initial situations due to great diversity of geographical, historical, political, and social structures, the analysis in this part will consider the current characteristics of each country in order to classify the risk and opportunities within the group. Hence, this part of our paper was chosen to result in an outcome, which will yield useful and applicable information on a country level.

As mentioned before, the data for the following analysis has been retrieved from publically available data sources, mainly the African development indicator database provided by 'The World Bank'. The statistical findings have been calculated through an excel analysis attached to this report. Whilst our analysis mainly focuses on the characteristic of the top and bottom group, the excel analysis provides all necessary data to rank all SSA countries. Due to the fact that countries are made comparable, the result of the analysis is comprised of a universal ranking. However, analyzing every country individually in great detail would by far exceed the scope of this paper.

5.1. Computation of the Indicator

In order to create a comprehensive and meaningful indicator, it is important to include data from all major topic areas, namely economy, population, education, infrastructure, and health, as all factors contribute to the future development and the status quo of a country. To be able to compare countries with different manifestations, it is of great importance to choose relative numbers such as percentages and ratios. In our approach, each country was relatively ranked within each element of the indicator on a scale between one and zero – one being best in group and zero being last in group. These sub-elements are summarized in the composite indicator with specific weightings. In our case, the emphasis lies on GDP per capita and GDP growth, as it illustrates the economic power and development strength of a country, on the dependency ratio, as it reflects the age distribution and thus the active workforce, and on health care and education expenditure, as these factors demonstrate the willingness of a country to invest into their future. However, the consulted data also reveals minor weaknesses, as some African countries do not publish data on a regular basis or simply do not collect specific data. As a result, the enquiry period bears several years in very few cases, but no data before 2005 was incorporated. Whenever no data was applicable at all, average values were built.

5.1. Limitations of the Indicator

An indicator generally can never provide a full picture of a country's challenges and risks. Many researchers and also UN countries claimed that indicators and ratings never provide a complete view, as factors have been excluded and sometimes inaccuracy cannot be avoided (Brazil, Morocco, and South Africa, 2010; Davis and Kingsbury, 2011, Hood, Dixon and Beeston, 2008). In our case some countries did not publish the necessary data and had to be averaged or excluded.

Due to the unstable political situation in Somalia, the data insufficiency is very distinct and thus, Somalia is not considered in the analysis. Furthermore, Equatorial Guinea features a comparative high GDP per capita due to its development to one of the biggest oil producers in the world. As the country suffers from one of Africa's worst dictators, the political situation is very unstable. The triumph of the last decade's oil revenues encourages the country to further invest into this industry instead of progressing the development of the population, which lives under very poor conditions. Only a change within the political system or an intervention of the close business partner USA could initiate a rapid improvement of the situation. (McSherry, 2006) As the extreme data values of Equatorial Guinea distorts the comparability of the other states it is not considered in the analysis.

Lastly, the island states of SSC, being, Seychelles, Mauritius, Cabo Verde, and Sao Tome and Principe are also not involved in this analysis as these countries all feature characteristics that exacerbate the comparability with the challenges of the mainland countries. This is because their prosperity originates mainly from tourism and they illustrate an entirely different initial situation with incomparable risk factors.

Consequently, 42 countries of the 48 SSC countries are covered by our analysis.

Generally, an indicator is always a numerical measure, not including non-numerical data such as for example political stability. In the case of SSA high political uncertainty makes forecasts and recommendations difficult in general. Consequently, the indicator always has to be seen in this context and in order to assess investment opportunities factors beyond numerical values have to be considered.

5.2. Characteristics and Outlook of the Top Group

Figure 3: Top Group (own Illustration)

The top group of the composite demographic risk indicator ranking consists of South Africa on the first place, as well as Botswana, Namibia, Gabon, Swaziland, and Ghana. These six countries are located at the coast in the southern and western parts of Africa as illustrated in figure 2 and reached composite indicator values between 0.74 and 0.46. Generally, they are characterized by a strong GDP per capita paired with a moderate GDP growth rate. This comparably high income of the leading six states, which averages on US$5,975 per capita, enables the government to spend higher absolute amounts of money into sectors such as health and education. These investments pay off and ultimately make the difference: With an average youth literacy rate of 91.62%, the top group already reached a sustainable level of education. This directly impacts the fertility rate, which amounts to only 3.27 births per women and thus also decreases the total dependency ratio to 68.25 per 100 people. Within the health category, the life expectancy at birth lies at 56.64 years, while the infant mortality rate is particularly low with 41.93 per 1000 births. Lastly, the most severe discrepancies can be observed in the communication infrastructure, as 5.27 telephone lines per 100 persons and 20.67 internet users per 100 persons exceed the SSA average by far.

Botswana, for example, is one of the countries that underwent an extraordinary development under a fairly beneficial initial situation. Since its independence in 1966, the country is reigned democratically. At that time, beef production contributed 39% to its GDP and therefore represented a major sustainable resource. At independence, mineral resources in terms of diamonds further started to boost the economy and became the main source of

income. In the future, Botswana's biggest challenge will be the economic dependency on minerals, which has to be overcome, fostering growth in the manufacturing sector in order to sustain GDP growth (Chuhan-Pole & Angwafo, 2011).

However, the occurrence of minerals does not guarantee the success of a country. As the examples of Zambia, Nigeria, Democratic Republic of Congo, and Sierra Leone show, mineral resources are ineffective without good governance and beneficial economic management, and do not necessarily lead a country to prosperity. In SSA, this is mainly due to the fact that mineral sources are owned by the government, which does not necessarily use the income to alter the development of the country in a positive way. The saying "good economics, bad politics" (Tyler & Gopal, 2010) therefore draws a realistic picture for most of SSA's mineral-rich countries.

In 2013, the GDP per capita in Botswana accounted for US$7,317 with a strong GDP growth rate of 5.74%. Despite a high literacy rate of 96.04%, $US694.18 of government expenditures per capita were devoted to the educational sector. Surprisingly, Botswana only features a life expectancy of 46.99 years at birth, which is far below the values of the other countries in the top group. This is caused by relatively low total health expenditures, which only amount to $US388.30 per capita. The main reason, however, is illustrated by the high Human Immunodeficiency Virus (HIV) prevalence rate of the population aged from 15 to 49 years (Boseley, 2002), which has reached extremely alarming levels of 21.90%. This third highest HIV prevalence rate worldwide is enlarged by the relatively low health expenditures.

Another country of the top group is Swaziland, which shows the same problematic in respect to life expectancy (48.85 years at birth) and the highest HIV prevalence rate worldwide of 27.4% despite good economic growth.

5.3. Characteristics and Outlook of the Bottom Group

Figure 4: Bottom Group (own Illustration)

The bottom group of the composite indicator ranking consists of the Democratic Republic of Congo, Mali, Guinea, Niger, Chad, and the Central African Republic on the last place. The geographical location is very continental and reaches from middle Africa to West Africa as illustrated in figure 3. These six countries only reached composite indicator values between 0.29 and 0.17. The average value of the GDP per capita represents only a tenth of the top group with $US581. But only very few countries like the Central African Republic, which has a GDP growth rate of minus 10.39%, reveal a negative average growth rate over the past three years. Due to the low income, however, the public spending in education and health, which are just below SSA average, do not have a significant effect. This becomes apparent when examining the low literacy rate of 42.19% and the mortality rate of 78.87 per 1000 births, which are both far below average. Surprisingly, the life expectancy only lies approximately 3.5 years below the SSA average of 56.47 years. By far the weakest values are achieved within the category of infrastructure, with only 0.30 telephone lines and 2.27 Internet users per 100 people.

The distinct problems of this group can be well illustrated by the example of Niger. Due to the highest fertility rate of 7.57 births per woman among the SSA countries, the share of under 14 year-olds amounts to 50.09% and thus yields a dependency ratio of 110.12 per 100

people. This development implies a doubling of population within only 20 years. Obviously, no country in the world would be able to comply this development with appropriate expenditures in education and health. The result: A cycle of poverty. The only way to escape this vicious circle is constituted by specific investments into the educational and health care sector, with even more specific goals that aim to lower the fertility rate. Within the health sector, the main focus must be the improvement of sexual and reproductive health, the offer of sexual education, and the facilitation to access contraceptives. Moreover, the reduction of child mortality decreases the wish for more children, as each child individually has a higher survival rate. The sector of education, on the other side, must have the goal to improve the role of women within the society, as most women wish to have fewer children than their respective husbands. Thus, young women need to have equal rights regarding education and additionally have access to secondary education. Achievements in this regard would lower the fertility rate and fosters economic progression. In an optimal scenario these factors have an influence on family planning and would thus trigger an upward spiral, as the relative number of people in working age would increase. As a consequence, the economy is stimulated and further money is available to pursue the mentioned goals. The example of the Asian Tigers has impressively proven that such a progression is also possible for the six countries of the SSC bottom group (Sipple et al., 2011). For such a development, however, stable governance without corruption and overthrown governments, as exist in the Republic of Congo, are mandatory basic requirements (Tyler & Gopal, 2010).

5.4. Multivariate Statistical Analysis

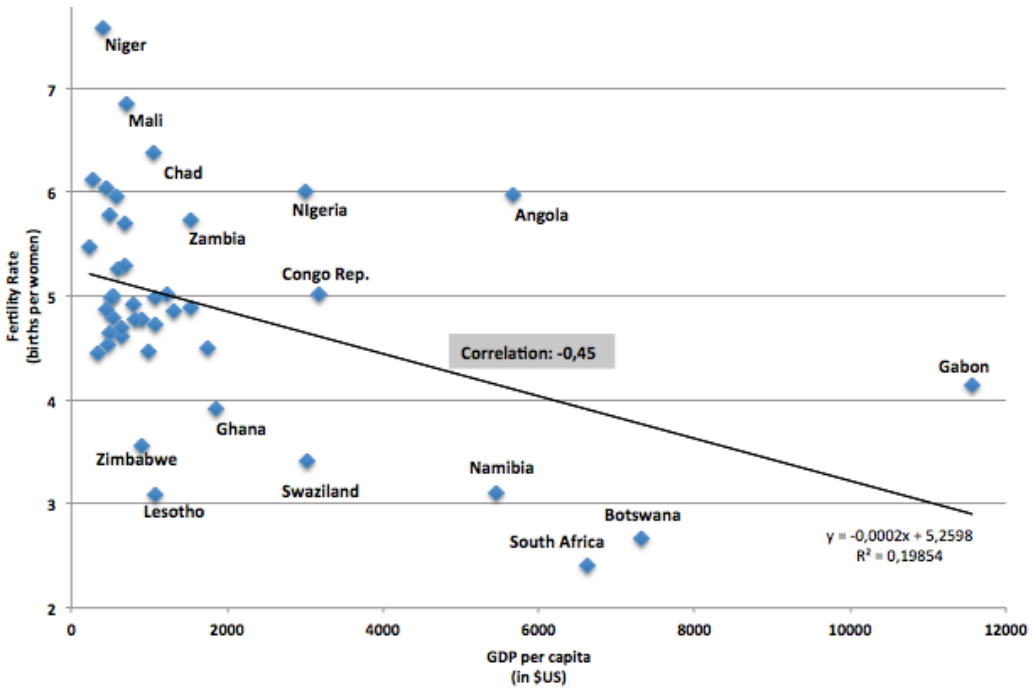


Figure 5: Correlation Between Fertility and GDP per Capita (own illustration)

As one main finding of this paper asserts that the key success factor to economic development leads over a reduction of the family size, this analysis aims to reveal the relation between GDP per capita and the fertility rate. Apparently there is a strong negative correlation between fertility rate and GDP per capita of -0.45. Extreme examples are illustrated by South Africa with a GDP per capita of $US6,618 and a fertility rate of 2.41 and Niger with a GDP per capita of $US413 and a fertility rate of 7.57.

Explanations for this phenomenon are for example, that children consume resources instead of producing them, and additionally parents take time to take care for their children instead of working and thus do not substantially contribute to the GDP. Moreover, government investments have to be spread over a higher amount of people, which makes them less effective. Thus, we can deduce that there is a connection between those two factors, but it has to be considered that a multitude of different factors lead to such a development (Ahituv, 2001).

6. Conclusion

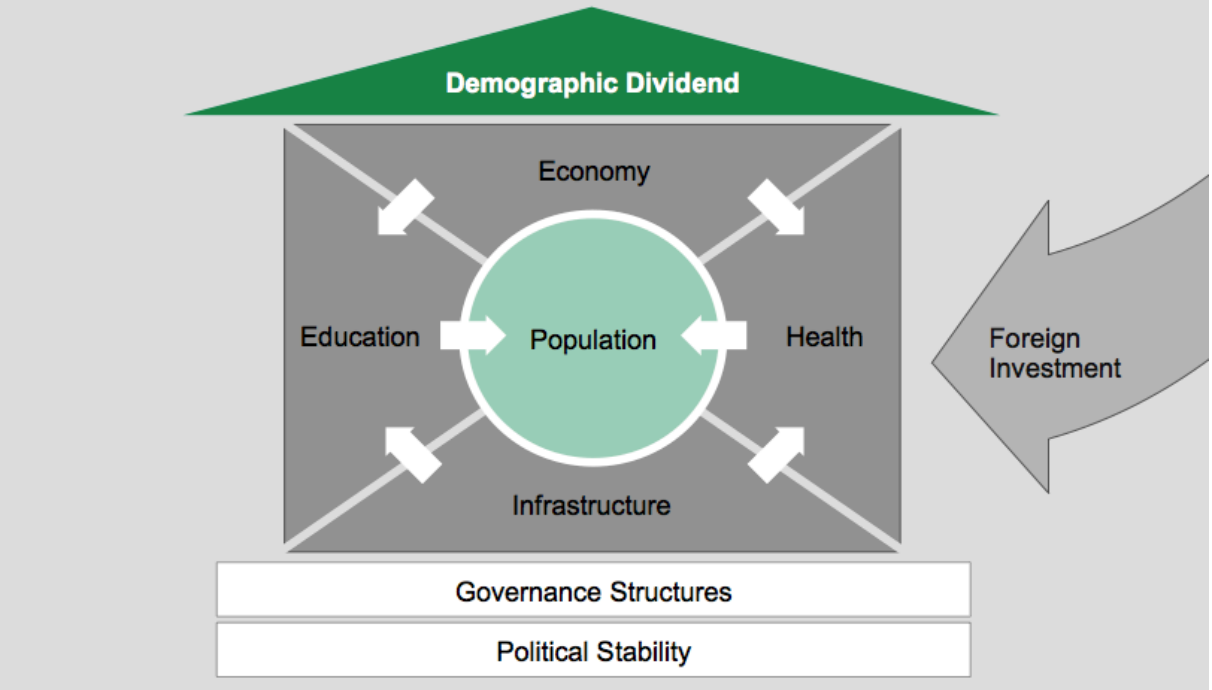


Figure 6: Framework of Main Demographic Drivers for SSA (own Illustration)

6.1. Summary

Our composite indicator shows the differentiation of the diverse stages of economic development of the SSA countries and their ground for coping with demographic challenges

and exploiting demographic opportunities. The developed composite risk indicator includes factors concerning Population, economy, education, health and infrastructure. However, for further investigation the main soft factors governance structure, political stability, and future foreign investments have to be considered to give a full picture. A joint functioning of the factors in Figure 6 can yield a demographic dividend.

Typically the countries of the top group exhibit higher GDP per capita rates, while GDP growth rates in relative terms differ only slightly from of the bottom group. Consequently, this complies with our computed correlation and thus the countries of the top group also display lower fertility rates and lower infant mortality rates. While health expenditure rates do not differ significantly from the values of the bottom group, the absolute health expenditures are higher, due to the higher overall GDP, and are therefore even more effective. The bottom group especially faces high dependency ratios and low literacy rates which serve as starting points of improvement.

To improve the economic and social situation of the bottom group, the government and political situation have to be stable and the introduced measures have to be sustainable and directed to the individual challenges of the respective countries. The nations of SSA require an especially solid and stable political situation as the basis for further development.

Further opportunities lie in SSA as an emerging market for foreign investments, since it offers larger returns on investments than comparable markets. Due to the accelerating development, foreign companies search for opportunities within the growing sectors of "retailing, telecommunications, banking, infrastructure-related industries, resource-related businesses, and all along the agricultural value chain" (Chironga et al., 2011, p. 2). Africa's spending on goods and services in 2008 amounted $US860 billion and therefore exceeded nations like India ($US635 billion) or Russia ($US821). At current growth rates, this value is expected to increase to $US1.4 trillion in 2020. Already today, companies like Zalando SE recognize the potential of the region and introduced its business model in countries such as South Africa, Namibia, Kenya, and Nigeria.

6.2. Outlook on Future Research

As mentioned above, due to the scope of this paper, it was not possible to thoroughly analyze all individual SSA countries and their political, historical, and social background beyond numerical measures, except for the examples examined. Current research mainly focuses on the analysis of Africa or SSA as a continent or in depth analysis of single countries, but neglects a linkage of both, due to the complexity of this task. Consequently, the composite indicator can serve as a basis for further future research, in order to give a more detailed and specific evaluation of demographic risks and opportunities which can then

be used for detailed due diligence, future political measures, and an assessment of investment opportunities.

7. Appendix

Main Categories			Economy			Population			Education			Infrastructure			Health					
Indicator Elements			GDP per capita (current US$)		GDP growth (2011-2013 in %)	Fertility rate, total (births per woman)		Total dependency ratio (<15 & 65+)/(15-64) per 100 population	Public spending on education (per capita in $US)		Literacy rate, youth total (% of people ages 15-24)	Telephone lines (per 100 people)		Internet users (per 100 people)	Health expenditure, public (per capita in $US)		Life expectancy at birth, total (years)		Mortality rate, infant (per 1,000 live births)
Weighting					3	4		4	3		4	1		1	3		2		2	
Year			2013		2013	2012		2010	2005-2012		2005-2012	2013		2013	2005-2012		2012		2013	
Average			1748,38	0,13	4,56%	4,90	0,52	85,79	100,96	0,14	69,69%	1,58	0,17	10,49	103,19	0,16	56,47	0,59	58,24	0,66
Rank Compound Indicator	Sub-Saharan Country	Compound Indicator																		
1	South Africa	0,74	6617,91	0,56	2,72%	0,53	2,41	1,00	53,70	1,00	437,01	0,63	98,88%	1,00	9,16	1,00	48,90	1,00	581,51	1,00	56,10	0,57	32,80	1,00
2	Botswana	0,68	7316,88	0,63	5,74%	0,64	2,67	0,95	60,61	0,88	694,18	1,00	96,04%	0,96	8,62	0,94	15,00	0,29	388,30	0,66	46,99	0,09	36,30	0,95
4	Namibia	0,66	5461,53	0,46	6,03%	0,65	3,11	0,87	69,86	0,71	456,89	0,66	87,10%	0,84	7,97	0,87	13,90	0,27	455,92	0,78	63,88	0,98	35,20	0,97
3	Gabon	0,64	11571,08	1,00	6,59%	0,67	4,14	0,67	78,44	0,56	561,20	0,81	88,50%	0,86	1,15	0,13	9,20	0,17	401,57	0,68	63,07	0,94	39,10	0,92
5	Swaziland	0,49	3034,22	0,25	1,36%	0,48	3,41	0,81	72,96	0,66	250,47	0,36	93,50%	0,93	3,68	0,40	24,70	0,50	258,81	0,43	48,85	0,19	55,90	0,69
6	Ghana	0,48	1850,20	0,14	11,35%	0,84	3,92	0,71	73,92	0,64	150,62	0,21	85,72%	0,83	1,04	0,11	12,30	0,24	95,74	0,14	60,95	0,83	52,30	0,74
7	Zimbabwe	0,43	904,76	0,06	6,66%	0,67	3,56	0,78	82,54	0,49	22,63	0,03	90,93%	0,89	2,15	0,23	18,50	0,37	58,51	0,08	58,05	0,67	55,00	0,70
8	Lesotho	0,42	1074,85	0,07	5,33%	0,62	3,09	0,87	72,17	0,67	139,54	0,20	83,19%	0,79	2,78	0,30	5,00	0,09	124,17	0,19	48,84	0,19	73,00	0,46
9	Kenya	0,41	994,31	0,07	4,76%	0,60	4,46	0,60	82,42	0,49	66,30	0,09	82,39%	0,78	0,46	0,05	39,00	0,79	47,17	0,06	61,08	0,83	47,50	0,80
11	Eritrea	0,40	543,82	0,03	5,95%	0,65	4,79	0,54	82,28	0,49	11,57	0,01	90,95%	0,89	0,98	0,11	0,90	0,00	14,16	0,00	62,23	0,89	36,10	0,96
10	Congo, Rep.	0,40	3172,06	0,26	3,68%	0,56	5,01	0,50	93,41	0,30	197,33	0,28	80,91%	0,76	0,35	0,04	6,60	0,12	100,37	0,15	58,30	0,69	35,60	0,96
12	Rwanda	0,39	632,76	0,04	6,86%	0,68	4,62	0,57	88,60	0,38	30,31	0,04	77,34%	0,71	0,38	0,04	8,70	0,16	67,44	0,09	63,49	0,96	37,10	0,94
13	Comoros	0,38	894,39	0,06	2,99%	0,54	4,78	0,54	82,20	0,49	68,05	0,09	86,41%	0,83	3,13	0,34	6,50	0,12	40,58	0,05	60,64	0,81	57,90	0,66
14	Sudan	0,38	1752,90	0,13	-6,09%	0,20	4,49	0,60	82,47	0,49	85,02	0,12	78,16%	0,72	1,09	0,12	22,70	0,45	127,04	0,20	61,86	0,87	51,20	0,75
15	Senegal	0,37	1071,92	0,07	3,29%	0,55	4,98	0,50	87,72	0,40	60,03	0,08	66,03%	0,56	2,43	0,27	20,90	0,42	53,21	0,07	63,20	0,94	43,90	0,85
16	Togo	0,36	636,44	0,04	5,59%	0,63	4,70	0,56	81,20	0,51	28,78	0,04	79,89%	0,75	0,92	0,10	4,50	0,08	54,97	0,07	56,15	0,57	55,80	0,69
17	Cameroon	0,35	1315,49	0,10	4,96%	0,61	4,86	0,53	87,47	0,40	40,78	0,05	80,57%	0,76	3,59	0,39	6,40	0,11	67,50	0,09	54,59	0,49	60,80	0,62
18	Tanzania	0,35	694,77	0,04	7,25%	0,69	5,29	0,44	92,14	0,32	42,95	0,06	74,56%	0,68	0,34	0,04	4,40	0,07	48,58	0,06	60,85	0,82	36,40	0,95
20	Mauritania	0,35	1070,09	0,07	6,25%	0,66	4,73	0,55	77,61	0,58	39,49	0,05	56,12%	0,43	1,39	0,15	6,20	0,11	68,34	0,10	61,35	0,85	67,10	0,54
19	Madagascar	0,35	470,95	0,02	1,86%	0,50	4,53	0,59	86,06	0,43	12,80	0,01	64,94%	0,55	1,09	0,12	2,20	0,03	19,36	0,01	64,25	1,00	39,60	0,91
21	Ethiopia	0,34	498,08	0,02	11,13%	0,84	4,64	0,57	91,33	0,33	23,58	0,03	54,98%	0,42	0,81	0,09	1,90	0,02	19,09	0,01	62,97	0,93	44,40	0,84
22	Nigeria	0,34	3005,51	0,24	5,09%	0,61	6,00	0,30	87,80	0,40	145,77	0,21	66,38%	0,57	0,21	0,02	38,00	0,77	182,29	0,30	52,11	0,36	74,30	0,44
23	Liberia	0,33	454,34	0,02	11,30%	0,84	4,87	0,52	86,63	0,42	12,82	0,01	49,07%	0,34	0,00	0,00	4,60	0,08	70,54	0,10	60,21	0,79	53,60	0,72
24	Angola	0,32	5668,12	0,48	4,58%	0,60	5,98	0,31	100,92	0,16	197,05	0,28	73,01%	0,66	1,00	0,11	19,10	0,38	196,91	0,32	51,46	0,32	101,60	0,08
26	Uganda	0,31	571,68	0,03	5,55%	0,63	5,96	0,31	105,36	0,08	18,75	0,02	87,41%	0,85	0,55	0,06	16,20	0,32	45,58	0,06	58,65	0,70	43,80	0,85
27	Burundi	0,31	267,48	0,00	4,41%	0,59	6,12	0,28	86,77	0,41	15,57	0,02	88,89%	0,87	0,21	0,02	1,30	0,01	21,76	0,01	53,63	0,44	54,80	0,70
25	Zambia	0,31	1539,60	0,12	7,30%	0,70	5,73	0,36	98,28	0,21	20,71	0,02	64,05%	0,54	0,80	0,09	15,40	0,30	100,71	0,15	57,02	0,62	55,80	0,69
28	Gambia, The	0,30	494,40	0,02	2,41%	0,52	5,78	0,35	94,17	0,28	20,33	0,02	69,43%	0,61	3,47	0,38	14,00	0,27	24,79	0,02	58,61	0,70	49,40	0,78
30	Guinea-Bissau	0,30	503,83	0,02	1,36%	0,48	4,99	0,50	81,34	0,51	24,44	0,03	74,28%	0,67	0,29	0,03	3,10	0,05	29,55	0,03	54,03	0,46	77,90	0,39
31	Sierra Leone	0,30	809,12	0,05	15,58%	1,00	4,78	0,54	80,91	0,52	23,27	0,03	62,72%	0,52	0,26	0,03	1,70	0,02	122,01	0,19	45,33	0,00	107,20	0,00
29	Benin	0,30	804,67	0,05	5,08%	0,61	4,93	0,51	86,22	0,42	43,01	0,06	42,36%	0,25	1,54	0,17	4,90	0,08	36,12	0,04	59,12	0,73	56,20	0,69
32	Cote d'Ivoire	0,29	1521,22	0,11	4,47%	0,59	4,89	0,52	81,55	0,51	70,02	0,10	48,31%	0,33	1,34	0,15	2,60	0,04	107,46	0,16	50,40	0,27	71,30	0,48
33	Malawi	0,29	226,46	0,00	3,87%	0,57	5,47	0,41	95,64	0,26	12,12	0,01	72,14%	0,65	0,21	0,02	5,40	0,09	20,74	0,01	54,72	0,50	44,20	0,85
34	Mozambique	0,28	592,98	0,03	7,77%	0,71	5,26	0,45	94,47	0,28	29,69	0,04	67,15%	0,58	0,30	0,03	5,40	0,09	38,09	0,04	49,84	0,24	61,50	0,61
35	South Sudan	0,27	1221,35	0,09	-11,62%	0,00	5,01	0,50	86,02	0,43	59,24	0,08	72,36%	0,65	0,00	0,00	12,68	0,25	31,17	0,03	54,64	0,49	64,10	0,58
36	Congo, Dem. Rep.	0,26	453,67	0,02	8,08%	0,72	6,04	0,30	83,93	0,46	11,36	0,01	65,78%	0,56	0,09	0,01	2,20	0,03	25,34	0,02	49,62	0,23	86,10	0,28
38	Guinea	0,25	527,26	0,03	3,57%	0,56	5,00	0,50	85,21	0,44	13,03	0,01	31,41%	0,10	0,16	0,02	1,60	0,01	33,20	0,03	55,84	0,56	64,90	0,57
37	Burkina Faso	0,24	683,95	0,04	7,20%	0,69	5,69	0,36	94,09	0,28	23,44	0,03	39,26%	0,21	0,81	0,09	4,40	0,07	42,18	0,05	55,86	0,56	64,10	0,58
39	Mali	0,19	715,13	0,04	1,50%	0,48	6,85	0,14	98,80	0,20	34,30	0,04	47,14%	0,31	0,75	0,08	2,30	0,03	41,60	0,05	54,60	0,49	77,60	0,40
40	Central African Rep.	0,18	333,20	0,01	-10,39%	0,05	4,45	0,60	80,31	0,53	4,06	0,00	36,36%	0,17	0,02	0,00	3,50	0,05	12,53	0,00	49,48	0,22	96,10	0,15
41	Chad	0,17	1045,89	0,07	4,30%	0,59	6,38	0,23	105,53	0,08	23,62	0,03	48,92%	0,34	0,24	0,03	2,30	0,03	29,36	0,03	50,70	0,28	88,50	0,25
42	Niger	0,14	412,52	0,02	5,93%	0,65	7,57	0,00	110,12	0,00	18,30	0,02	23,52%	0,00	0,56	0,06	1,70	0,02	29,54	0,03	57,97	0,67	59,90	0,64

Figure 44: Composite Indicator Overview (own illustration)

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Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

Intergenerational Solidarity:
A comparison of demographic trends and best practices in Slovenia and Sweden

Lecturer: Dr. med. Hans Groth, MBA

Submitted by

Karin Bratt
Maximilian Bredow
Maja Vidic

Executive Summary

Demographic trends, in particular the 'grandparent boom', are putting strains on global as well as domestic economic, political and social systems. One important though often neglected aspect in society, which is being highly influenced by the development, is *intergenerational solidarity*. The term is defined as both a monetary and non-monetary mechanism for supporting mutually beneficial exchanges between generations, and it takes place both within families (micro level), in the local community (mezzo level) and through public transfers (macro level). How this mechanism work is bound to differ between countries, as it is often dependent on demographic variables and historical as well as cultural embeddedness. In this paper we compare two very different European countries, Slovenia and Sweden, to see how intergenerational solidarity is manifested and what specific practices that are of importance for it to work. The aim is to learn how intergenerational solidarity can be strengthened and if the two countries can learn something from each other. To do this, an in-detail description of the countries' demographic landscape and trends has first been laid out. We conclude that Slovenian society has developed many initiatives on the mezzo level whereas Sweden experiences the exchanges predominantly on the macro level. As it should be considered important to fulfill all the three levels of solidarity in a relatively balanced way, we argue that countries within the European Union, as Slovenia and Sweden, shall increase their idea exchange and work more actively to create a public discussion on the issue of intergenerational solidarity. Only with a broad recognition will change be made possible, because in the end, the intergenerational solidarity is the responsibility of each and every one of us.

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2. Introduction

Demographic trends are putting strains on global economic, political and social systems and projections of the world of the future are often not particularly bright. Developed nations are confronted with challenges of aging populations; a 'grandparent boom', below replacement birth rates and shrinking working age population. It is becoming increasingly difficult to sustain the levels of economic growth and living standards that we have been used to in the past decades. One important though often neglected aspect in society, which is being influenced by demographic trends, is *intergenerational solidarity*. This mechanism is manifested differently across countries, and nations are addressing it in their own way, often depending on the most prevalent demographic variables affecting it, as well as the country's historical development and the cultural embeddedness in society.

For the purpose of this paper, we decided to focus on two countries, which often seem to find themselves in opposite ends of a spectrum both when it comes to demographic trends and intergenerational solidarity—Slovenia and Sweden. For instance, while Sweden has a rather individualistic society, scoring high, 71, on Hofstede's individualism dimension, Slovenia is, with a score of 27, more collectivistic oriented (Hofstede, 2014). Also, Sweden has intergenerational solidarity already deeply rooted into their society, being for example the first country in the world to introduce public pension system in 1913 (Eriksson et. al., 2005), while Slovenia has started to actively address this issue only recently (Narat et al., 2012).

The aim of this paper is to increase our understanding of how demographic trends are influencing or modifying intergenerational solidarity and what can be done to upheld or strengthen it. By comparing the demographic trends and their impact on political, economic and social arenas in the two countries, and understanding the interdependencies between families (micro level), institutions (mezzo level) and state (macro level), we aim to see what best practices have been developed in each country and that could be shared between them.

The study is based on secondary data retrieved from international databases as well as local progress reports and general media. Theoretical frameworks help us compile this data and the final analysis is conducted by qualitatively assessing what constitutes best practices for each country.

The disposition of the paper is as follows: We start the paper with a short literature overview of the topic of intergenerational solidarity and introduction of the concept of macro, mezzo and micro level of intergenerational solidarity. The theoretical part is then followed by a detailed description of demographic trends and their effects on political, social and economic arenas as well as a look into the development and status quo of intergenerational solidarity in both Slovenia and Sweden. We then compare the two countries in light of our findings and, by analyzing the most prevalent level of intergenerational solidarity and its link to demographic trends in each country, we try to see which best practices could be shared

between the two respective countries. We end the paper with some concluding remarks of the topic discussed, some practical implications, limitations of the paper and last but not least, the future outlook. In the appendix, graphs illustrate statistics from chapter three and allow for an easier comparison of Slovenia and Sweden—however, these graphs are not part of the paper and therefore not mentioned in it.

3. Theoretical background to Intergenerational Solidarity

Intergenerational solidarity can be defined as 'social cohesion between generations' (Bengtson and Oyama, 2007). According to the OECD (2011c), it can be understood as a both monetary and non-monetary 'mechanism for supporting mutually beneficial exchanges' between generations. Usually, it is associated with positive aspects of social connections and networks between generations.

When looking at the term *generation*, Bengtson and Oyama (2007) differentiate between macrogens, 'cohorts of age groups in the broader society', and microgens, 'age-ranked positions within a family with their implications of power and warmth'. Further, they describe *solidarity* in general with positive words such as actions of warmth, affection and support and criticize the focus on conflict and negative implications by sociologists.

Three levels can be observed when describing intergenerational solidarity: macro, mezzo and micro (Dominkuš, 2012). At the macro level, intergenerational solidarity is related to the welfare system (pension, healthcare, education) as a form of social contract between macrogens generations. On the mezzo level, intergenerational solidarity is based on the community and neighbors. Intergenerational solidarity on a micro-level relates to connections and relations between generations within the family entity.

Measuring intergenerational solidarity on a macro level is achieved by measuring public opinion on statements such as 'Older people are a burden to the society', while intergenerational family solidarity can be measured by asking questions like: 'How close you feel to your father' (Bengtson and Oyama, 2007).

4. Country Descriptions

This section will first explain the current demographic landscape and trends in Slovenia and Sweden, respectively, through looking at political, economic and social factors. Then, a description of intergenerational solidarity on the three levels of macro, mezzo and micro will be provided for each country.

4.1. Demographic Landscape and Trends in Slovenia

There are several *political and legal factors* influencing the landscape. First, since those who give shrink and those who receive grow in number, there exists a potential conflict between generations over the distribution of resources in Slovenia. According to the 2009 Eurobarometer survey, 55% of Slovenians think that political decision makers will pay less attention to the needs of young people because there will be higher number of older voters (European Commission, 2009). The perceived effectiveness of national justice system reflects a very low level of trust—only 24% of Slovenians trust their national justice system, representing the lowest score in the EU that averages 53% (European Commission, 2013). Loose criteria to veto a law by referendum result in a slow progress of much needed economic reforms (OECD, 2013a). In this context it must also be mentioned that Slovenia is a relatively young state, becoming independent from Yugoslavia only in 1991, something that has implications for the state of the political efficiency and speed of progress.

Turning to *economic factors*, five features are prevalent. The first concerns Slovenia's very rigid labor market. The Employing Workers Indicator lists Slovenia in the bottom 20% of the countries according to the difficulty to hire and lay off workers (World Bank, 2010). The nation also has one of the lowest rates of labor participation of older workers in OECD, only slightly above 30%, as well as less than 10% of part time employees (Statisticni Urad RS, 2014; OECD, 2009). There are limited job opportunities for both young and old people. The former are affected by labor market dualism, where there is preferential treatment of student work instead of regular employment, however, the 2013 Employment act was adopted to work as a step in reducing the dualism (OECD, 2014c). The latter face reluctance of companies towards older workers and there are virtually no age management policies implemented within Slovenian companies (Dolenc, 2008; Cok, 2008). A trend of the early retirement persists, which is a heritage from the transition period from public to private companies, where retirement was the most elegant way to lay off employees (Znidarsic and Dimovski, 2010).

Working age population is projected to shrink by 20% by 2060 in Slovenia, which will lead to labor market shortages (European Commission, 2012b). There is especially pressing shortage of science and technology graduates, which is directly affecting the health system, which is dealing with increased need for and limited capacity of health services (European Commission, 2012b). Slovenia has for example only 2.5 practicing doctors per 1,000 population, in comparison to OECD average of 3.16 (Statisticni Urad RS, 2008; Prevolnik et al., 2010).

Slovenia has one of the least sustainable pension systems in the OECD, due to the relatively low retirement age and contribution period, easy access to early retirement and demographic trends showing that the ratio of people aged 65 years and over to the total

number of employed is projected to double by 2060 (OECD, 2011b; Kierzenkowski, 2013). Some progress was done in 2012 with 'Law on Pension and Disability Insurance', which among others increased full retirement age for both men and woman to 65 years (Kierzenkowski, 2013). Nevertheless, the expenditures on pensions are still expected to increase by 5 to 6 percentage points of GDP between 2020 and 2060, which calls for further pension reforms (OECD, 2013a).

In 2010 Slovenia, spend only 1.3% of GDP for long-term care, below the OECD average of 1.5% of GDP. Long term care still represents fairly small share of GDP in comparison with spending for age-related spending on health and pensions, whereas the need for long term care is expected to double until 2030 (Prevolnik, R. et al., 2010)

Slovenia is facing serious long-term fiscal sustainability challenges. Expenditure control is poor and the share of public expenditures on social spending increased more than OECD average during the crisis—in 2005, it was 21.1% in Slovenia and 19.7% in OECD, and in 2013, it was 23.8% in Slovenia and 21.9% in OECD (OECD Pensions at a Glance, 2013). With no policy changes, public debt is projected to reach 87% of GDP in 2025. In addition, another strain is posed by the projected rise of age-related public expenditures, such as pensions, health and long-term care, which is 10% of GDP between 2010-60 in Slovenia, compared with the EU average of 3% of GDP (European Commission, 2012a).

Looking at the *social factors*, Slovenia has one of the lowest disposal income inequalities in OECD with a Gini Coefficient of 0.24 (CIA World Factbook, 2014; Kierzenkowski, 2013). The total fertility rate, 1.33 in 2014, is below replacement level. Low birth rate (11.92 births per 1,000 population in 2014), combined with the increasing life expectancy—82.3 years for females and 75.8 years for males in 2010 as opposed to estimated 88.8 years and 84 years respectively in 2060 (European Commission, 2012b)—lead to the growing number of elderly people. At the end of 2000 those aged 14 or younger made up around 16% of the population, whereas those aged 65 or older made up 14%. By 2014 these proportions had been reversed, with the former accounting for 13.4% of the population and the latter for 17.5% (Statisticni Urad RS, 2014). Old age dependency ratio is projected to increase from 26% in 2010 to 63% in 2060. At the same time, working age population (aged 15-64) as a share of total population is projected to fall by 15 percentage points by 2060, compared with EU average of 11 percentage points (Kierzenkowski, 2013). The unemployment is high, in 2013 it was 13.1% in total, while among youth the number was even higher, 20.6% (Statisticni Urad RS, 2014).

Slovenia is also facing population decline—it could decline from 2 million to only 1.6 million by 2050, with the high proportion of elderly (The Economist Intelligence Unit, 2011). It is doubtful that the process could be reversed with migration, since the net migration is low in

Slovenia, with its current rate of 0.37 migrants per 1,000 citizens in 2014 (Statisticni Urad RS, 2014).

Retired people in Slovenia depend highly on public pensions as a form of their income – it accounts of 66.2%, compared with OECD average of 59%. With the recent as well as upcoming reforms, the risk at poverty rate of elderly people is increasing, it was 10.5% in 2005 and in 2013 it already reached 13.6% (Eurostat, 2014a).

4.2. Demographic Landscape and Trends in Sweden

Sweden has experienced a great demographic shift for the last two centuries. During the 19th century, half of the population immigrated to North America due to a hostile environment and famine. Today, Sweden is one of the world's most developed and prosperous nations. Regarding the *political dimension*, intergenerational solidarity has been an increasingly discussed topic in the Swedish political arena for quite some time. In particular, the redistribution of resources to the increasing older population has been debated. In 2012, the former Prime Minster Fredrik Reinfeldt created some provocation when stating that working life could be extended until the age of 75 (Stenberg, 2012). Most recently, a governmental report on how to prolong the average working life was published (Eriksson, 2005). Proposed reforms want to tie more policies to life expectancy measures to ensure a dynamic development of reforms (Eriksson, 2005; Lindh, 2008). Sweden also upholds a risk for intergenerational conflict. According to the 2009 Eurobarometer survey, almost 90% of Swedes believe that it is difficult for the young and the old to agree on what is best for society (European Commission, 2009). However, a majority does not think that more old voters would make political decisions pay less attention to the needs of young people, which is more than the EU27 average (European Commission, 2009). In fact, confidence in the national government in Sweden continues to increase—in 2012, it was measured at over 60%, while the OECD average was around 40% (OECD, 2013b). Trust in the judicial system is even higher, amounting to over 70 % (European Commission, 2009; European Commission, 2013). As Politicians can be held accountable for their actions, it does not surprise that transparency in policy-making is acknowledged to be among the top 10 countries in the world (Schwab, 2013). Citizens can interact with public authorities through a well-developed online system, and almost 80% of the population use this channel for communication or filled forms (OECD, 2013b).

In terms of *economic factors*, Sweden is highly developed. According to the Global Competitiveness Report, the Swedish labor market is quite well developed (Schwab, 2013). Women participate in the workforce almost equally with men and the country is good at retaining its talent (Schwab, 2013). On the negative side, the labor market has a low flexibility with wage determination, and hiring and firing practices are considered rigid and problematic

(Schwab, 2013). The strict employment protection is likely to impede job market access for workers at the margin of the labor market (OECD, 2011a). This can be related to unemployment levels. Whereas total unemployment in Sweden is 8.1%, and is found on the lower end of the scale for the EU member states (Eurostat, 2014e), youth unemployment is pending on levels between 20-25% since 2004, which has often been more than the EU average (Eurostat, 2014e). This is recognized as one of the main challenges for the coming years (Schwab, 2013). Although Sweden are among the OECD countries spending most money on active labor market policies, there is a need for further policy reforms, in particular special targeted efforts to match individuals that risk becoming long-term unemployed with adequate positions (OECD, 2011a). Also, research has shown that there is a systematic discrimination against older people in the marketplace, mainly because the employer feels uncertain abut their productivity (Blix, 2013). In connection, only a rough 30% of all 60-64 year olds are still employed (OECD, 2011c). Still, the share of older workers (aged 55 to 74) in relation to the total labor force is highest among the EU27 with more than 20% (European Commission, 2012b). As of today, one Swedish worker is supporting 0.71 non-working citizens, with projections stating that this will evolve to 0.92 over the next 50 years (Blix, 2013).

Regarding the working population, projections indicate an increase of 7% of the total amount of workers until 2060, but its share of the total population will decrease from 65.1% to 56.9% in the same period, leaving Sweden on par with OECD average in 2060 (European Commission, 2012b). Nevertheless, the workforce growth goes against the general trend, as 20 nations out of the EU27 will experience negative growth (European Commission, 2012b). Interestingly, average effective exit age is forecasted to remain stable just below 65 years until 2060. Although the retirement age is flexible, allowed from 61 years of age and a right to work until 67 (Pensionsmyndigheten, 2014), up to 80% exit around 65, presumably due to a previous 65-age reform (Eriksson, 2005). Further reforms have been implemented in order to encourage a prolonged working life. For example, the employee's social security contributions are lower for workers over 65—incentivizing the employer—and the earnings income tax credit is higher for workers over 65, which spurs the individual to stay in the workforce as she gets taxed less (OECD Pensions at a Glance, 2013).

The ratio of citizens aged 65 compared to the total working-age population is much bigger than in the OECD average, 32.5% compared to 25.5% (OECD Pensions at a Glance, 2013). Not surprisingly, Sweden's public spending on pensions of 8.2% of GDP in 2013 is also higher than the OECD average of 7.8% (OECD Pensions at a Glance, 2013). However, projections for 2060 show smaller expenditures than EU27 average, with 10.2% versus 12.9%, which is likely to be attributed to the rather balanced aged group development (European Commission, 2012b). Thanks to pension reforms already in the late 1990s,

following the Swedish financial crisis, Sweden is considered better prepared than other OECD countries for meeting the rising share of elderly people (OECD, 2011a). This might also be related to Sweden being the first country in the world to introduce a public pension system in 1913 (Mellgren, 2013). In addition, healthy institutions and good control of expenditures have paved the way for fiscal solidity, strong public finances and one of the lowest public debts to GDP ratios in Europe, 35% (Riksgälden, 2014). GDP has also continued to grow, the last year with 1.6%, which is well above the EU28 average of 1% (Eurostat, 2014d). However, despite a sound fiscal position, Sweden will still face fiscal pressures related to health and long-term care (OECD, 2011a). Health expenditures already represent 9.4% of GDP and there exists 3.8 physicians per 1,000 citizens (CIA World Factbook, 2014).

Concerning *social factors*, a prevalent feature is the Swedish equality-oriented mindset. Disposable household income level is among the top in Europe but at the same time the country has one of the world's lowest Gini coefficients, 0.26 (Eurostat, 2014c), indicating a fair distribution of its high level income. Since 1842, primary school has been mandatory for all Swedes (Lindh, 2008). Up to this day Sweden is investing in preschool education at a high level, resulting in the total education expenditure at 6.3% of the GDP, as compared to the OECD average of 6.1% (OECD, 2014a). All education, from preschool to university, is free of charge for Swedish citizens and also for all EU, EAA and Swiss citizens (Sweden.se, 2014). Also, Sweden has one of the most beneficial parental leave systems, up to 480 days at 80% of the salary, and it was the first country to introduce a gender-neutral paid parental leave (Henley, 2013; CIA World Factbook, 2014). The government implements continued policies to incentivize fathers to use a bigger share of the days (Sweden.se, 2014; CIA World Factbook, 2014).

The share of people over 65 years of age has expanded from 18% in 2000 to approximately 20.5% in 2014 (CIA World Factbook, 2014). The adjacent trajectory for the age group under 15 is from 18% to 16.9% (CIA World Factbook, 2014). With a fertility rate of 1.94 that is projected to stay stable, and a continued net migration—5.46 migrants per 1,000 inhabitants in 2014 (CIA World Factbook, 2014)—Sweden's population is estimated to grow by 23% until 2060, which corresponds to 2 million people (European Commission, 2012b). This will increase the old-age dependency ratio from a near 40% to over 50%, but still remain below the EU27 average (European Commission, 2012b). Life expectancy at birth is forecasted to increase from 79.4 years for men and 83.4 years for women to 85.5 and 89.3 respectively (European Commission, 2012b), which will put pressure on the care for elderly people. In particular, mental ill health is becoming a concern. Half a million of the 1.6 million Swedes aged over 65 are considered to have a psychological disease that needs treatment (Allard, 2009). The problem is bigger for women, as 42% over 75 are depressed, compared

to 19% of men (Mukkala et. al., 2008). Also, the share of suicides is higher among elderly than in the population as a whole (Allard, 2009). The public support in this area, the ability for elderly to get help through primary care or special clinics, is low and voices have been raised advocating development and additional investments into these institutions (Allard, 2009).

4.3. Intergenerational Solidarity in Slovenia

Slovenia has been since the 90's actively engaged in various activities dealing with demographic change, active aging and intergenerational solidarity.

On a *macro level*, the first national program addressing the topic of demographic change and intergenerational solidarity was implemented in 1997. It encouraged the spread of private institutions and NGOs dealing with long term care needs of elderly, as an alternative option to retirement homes (MDDSZ, 1997). In 2006 an extension of the first program was introduced and the council for intergenerational solidarity and active aging was established (MDDSZ, 2006). To address the issue of the employment of elderly as well as reluctance of employers towards older workers, an additional program was implemented in 2010 (MDDSZ, 2010). In 2012 Slovenia participated in the European Year for Active Ageing and Solidarity between Generations, increasing national awareness of the issue of demographic changes and importance of intergenerational solidarity through variety of events, discussions and workshops (Europa EU, 2012). The government also started to prepare the 'Active Ageing Strategy 2013-20' with emphasis on supporting longer, healthier and more productive working lives, following the Guiding Principles on Active Ageing adopted by the EU Council in December 2012 (OECD, 2013a). A lot has also already been done to strengthen intergenerational solidarity in educational sector. The curriculums for primary schools and high schools include course 'Education for solidarity', which is intended to spread awareness of demographic changes and importance of intergenerational solidarity. Moreover, further steps for financing programs such as lifelong learning and computer literacy have been taken (MDDSZ, 2012b). The programs promote an elderly-friendly community and intergenerational symbiosis. However, there are remarkable differences in regional implementation of the programs, for instance in long term care availability. In addition, intergenerational solidarity is viewed in Slovenia especially from the point of view of elderly and their needs and wishes; how youth could and should benefit from intergenerational solidarity is often neglected. In addition, there is a lack of common definition about what is understood under intergenerational solidarity and intergenerational symbiosis, similar to the situation in other EU States. (Hlebec, 2012b).

On a *mezzo level*, Slovenia has developed a comprehensive network of knowledge and initiatives, which are well embedded into the society and foster intergenerational solidarity on a daily basis. A few examples of larger, national-wide projects include (a) 'Project Simbioz@

e-literal Slovenia' where young people teach elderly computer literacy (Simbioz@, 2014), (b) Project ‘Hand in Hand’ where kindergartens and primary schools visit retirement homes and jointly take part in various activities (Z Roko v roki, 2014), (c) 'Zavod Y – On Triglav to change the world' which offers community place for intergenerational exchange in Ljubljana, where various games, gym classes and discussions are organized (Zavod Y, 2014), (d) 'Anton Trstenjak Institute of Gerontology and Intergenerational Relations' with a system of 24 programs that support either older people, intergenerational relationships or both (Anton Trstenjak Institute of gerontology and intergenerational relations, 2014), (e) 'Fruits of Society' which is program connecting schools with associations for elderly people, and encouraging them to start developing different intergenerational activities (Slovenska filantropija, 2014a) and (f) project 'Family' that helps organizing living community for old and young to live together (Druzina, 2014).

Apart from these national wide projects, there is a long list of smaller NGOs that have activities limited to a specific region, but are nevertheless an important cornerstone of the intergenerational exchange in the community. Almost every village in Slovenia has a place for young and old to meet, organize activities and learn from each other. Often, those are part of Catholic Church, fire brigade homes or scout community places, so their sole purpose is not focused on intergenerational activities; however, when examining the specter of their annual initiatives, one can see that fostering intergenerational solidarity represents an important part (Hozjan, 2010; Zibert, 2013; Mesko et. al., 2013; Narat et. al., 2008).

Intergenerational solidarity on the *micro level* is one of the very present aspects of intergenerational solidarity in Slovenia. According to law, parents are obliged to take care of their children until they have sufficient means to be independent. However, more important than law itself are the expectations and norms in the society that take for granted intergenerational solidarity within a family: parents take care of children while they are young, while children take care of parents when they become old—more than 78% of Slovenians agree to this. The most pressured age group is from 40-49 years, since they have to give most support to both younger and older generation, while receiving none themselves (Hlebec, 2012b).

4.4. Intergenerational Solidarity in Sweden

Looking at the *macro level*, Sweden is one of the most extensive welfare states in the world, with a reputation of good support for its elderly. The country has had formal institutions taking care of elderly people since the mid-20th century. Some argue that this tradition relates back to medieval times when the church gathered and spent its ‘social taxes’ locally, and was one main factor that led to the development of an early welfare state (Johansson and Sundström, 2006). From the 1950s onwards, there was a trend of institutionalizing those who could not

take care of themselves. However, this solution has gradually decreased since the option of 'home care', having professional caretakers coming to the elderly's house, was introduced. In 1975, 30% of those 80 and older in Sweden were institutionalized, and 39% used public home help, whereas in 2003, the share was 19% for both forms of assistance (Johansson and Sundström, 2006). Nevertheless, up to 90-95% of elders are likely to use public old-age care today compared to only 50% throughout the 1970s and 1980s (Johansson and Sundström, 2006). Consequently, the states spending on old-age related support, such as pensions, housing allowances and old-age homes, has increased from 5% of domestic GDP in 1950s, to representing about 12% from the 1990s and onwards (Johansson and Sundström, 2006). This is also reflected in the National Transfer Accounts study, where elderly Swedes are showed to be heavily dependent on public transfers compared to incomes from private transfers or assets (National Transfer Accounts, 2011). It is viewed as rather unlikely that pensioners will accept cuts in their pension earnings for the sake of a sustainable society (European Commission, 2009). Nevertheless, the general population does not believe that Swedes will turn reluctant to paying taxes and supporting older people in the future, on the contrary, there is extraordinary content with how the national fiscal income is spent (European Commission, 2009). But then again, Sweden is recognized for high-quality institutions and a high degree of government efficiency and trust (Schwab, 2013). In addition, Sweden was an active participant in the European Union's official year for active aging with projects and publications around elderly care, a longer and healthier working life, and conditions for active participation in society (Gamrell Nyberg, 2013). There are also some educational programs for elderly, such as English or computer courses, to encourage further training and an active lifestyle (Gamrell Nyberg, 2013).

For the *mezzo level* it must be noted that structured involvement by local communities took place for several hundred years and helped to develop many of the formal institutions organizing the intergenerational solidarity of today (Johansson and Sundström, 2006). Still today, Sweden has one of the highest participation rates when it comes to associations and charity organizations, with 45% of the population involved—the majority being sports-related (Gamrell Nyberg, 2013). Elderly tend to participate more in social activities such as associations for pensioners or religious congregations, with a participation rate between 10-13% for those above 65 (Gamrell Nyberg, 2013). However, there does not seem to exist enough opportunities for older and younger people to meet and work together in associations and local initiatives (European Commission, 2009). This might be related to a Swedish fixation on age, assigning attributes to each age group, which makes intergenerational exchange and meetings difficult (Gamrell Nyberg, 2013). A survey reveals that Swedes believe schools could do more to promote better relations between the young and old, and there is also support for local authorities backing organization that fosters better relationship

(European Commission, 2009). In this vacuum of interconnections between generations, two initiatives that try to mitigate this gap have gained attention lately. The first one is the 'Class granddads' projects that since 1996 assist teachers by letting older (often retired) men function as assistance in the classroom as well as during the breaks (Gamrell Nyberg, 2013). The second example is the company 'Ung Omsorg' (translated 'Young Care') that employs high school students who go to retirement homes during weekends to do social activities with the elderly (Ung Omsorg, 2014).

Focusing on the *micro level*, it is rare for elderly to live together with their adult children in Sweden; only 2% do so (Johansson and Sundström, 2006). The norm is to live together with a partner or alone (Eurostat, 2010). As a matter of fact, the number of people aged over 65 years living in single households is the second highest in the EU, with over 52% of women and 28% of men (Eurostat, 2010). Nevertheless, they are not left out in the cold. Legislation obliges municipalities to provide support for those whose needs cannot be satisfied otherwise (Johansson and Sundström, 2006). For married couples, the law states a responsibility for each other and in general, 37% of people above 65 years receive support from family members or close friends (Johansson and Sundström, 2006). This share has gone down from 77% in 1954, but has been quite stable since the 1970s, not surprisingly this development coincides with the building of the welfare state (Johansson and Sundström, 2006). On the other end, only 10-12 % of people between 45-64 help and supports their parents today (Johansson and Sundström, 2006) and questions have been raised lately about whether these care takers are receiving sufficient support from social services (European Commission, 2009). The exchange also goes the other way around. In the flash barometer survey (OECD, 2011c) over 50% of Swedes state that the grandparents spend time caring for their grandchildren. However, the young generation is less likely to depend on financial support from their parents and grandparents compared to other EU countries (OECD, 2011c). There is though a legal obligation for parents to care for children until the legal age of majority, which is 18.

To summarize, Sweden has gradually replaced an intergenerational personal contract with a societal one, relying primarily on public services, and notably, there is still strong support for the state bearing the majority of the responsibility (Johansson and Sundström, 2006).

5. Assessment of Best Practices

In the following section, we analyze the most prevalent of three dimension of intergenerational solidarity in each country's structure. We will show examples for how this dimension addresses the demographic challenges of each country, strengthening intergenerational solidarity.

5.1. Best Practices in Slovenia

From what we have understood in the country description above, the macro level in Slovenia is not yet sufficiently developed, reflecting the rather late involvement of the state towards strengthening intergenerational solidarity, and still inadequate attention and importance is given to this topic. Although the micro level is present in the already traditionally collectivistic society, the most development, actions and initiatives in Slovenia are happening on the mezzo level. Slovenia is a great example of how a comprehensive network of organizations and NGOs fostering and strengthening intergenerational exchange, organized on the community level, can help in addressing issues posed by demographic trends and while doing it promote its main goal of intergenerational solidarity. For this reasons we will focus our analysis of Slovenian best-practices on this middle dimension of intergenerational solidarity. In the following paragraphs, we will take a closer look at three demographic challenges in Slovenia, namely unemployment, pension reforms and long-term care provision, in light of how they are indirectly contributing to higher intergenerational solidarity within Slovenian society.

Slovenia is facing high unemployment, especially among youth. Further development and promotion of activities concerning intergenerational solidarity on mezzo level is working well in providing unemployed with an opportunity to get more involved in these activities and gain valuable practical experiences as well as develop social networks that can be very helpful in finding a new job. At the same time, they are also both being part of intergenerational activities themselves as well as spreading the intergenerational spirit across the community (Hozjan, 2010). One example of such a win-win solution is e-literacy project Simbioz@, which was awarded by European Parliament with the award 'Citizen of Europe' (RS Government Communication Office, 2012). The main idea is promoting computer literacy among elderly by organizing classes, which are taught by younger, computer savvy generation. Some of the volunteers who were very actively involved in the project in the past years are now employed in its main organization, Zavod Y (Simbioza Giba, 2014).

Pension reforms are implementing higher age of retirement which is prolonging working life in Slovenia, but at the same time the lack of governmental initiatives to protect older workers is often the reason for elderly to be unable to keep existing job, let alone find a new one (Znidarsic and Dimovski, 2010). As we have seen, Slovenia has one of the lowest rates in older worker participation in the labor force in OECD. Getting involved in the organizations promoting intergenerational solidarity is a way for older people to continue with working life and have their own source of income, instead of relying on others. At the same time, being part of intergenerational activities can help them to derive meaning and purposefulness in their work as well as generally contribute to higher solidarity through intergenerational

exchange (Hlebec et al, 2012a). One such example is 'Anton Trstenjak Institute of Gerontology and Intergenerational Relation' where elderly can get involved in one of the 24 programs and find a good match between skills they able to offer and the needs of the program (Institut Antona Trstenjaka, 2014).

The amount of resources for long-term care provided by the Slovenian state is not well aligned with the increasing number of old people who require it. This gap has been filled with several initiatives coming from the community itself. For example, the non-profit organization Druzina has developed a platform, where the young and old generation can help each other by living together. The idea is that an old person, who needs help in everyday activities but has no means for paying for long-term care, offers a young person, who might be experiencing financial problems, a place to stay in their home in exchange for help with day-to-day chores. Through living together, both can learn valuable lessons about intergenerational solidarity, which is, when the number of such living arrangements increases, an important step towards increased intergenerational solidarity in the society (Zavod St. Stanislava, 2014).

A great lesson we can learn from Slovenia is that intergenerational solidarity in the society can derive and be significantly shaped and developed on mezzo level. Nevertheless, demographic trends are impacting society as a whole, and therefore, it seems natural to actively trying to strengthen intergenerational solidarity at the macro and micro levels as well. Actions of the welfare state are of course of crucial importance in addressing the demographic trends and their impacts on the society, also in terms of intergenerational solidarity. Nonetheless, initiatives coming from the community have, at least in the case of Slovenia, proven to be an important promoter and shaper of intergenerational solidarity.

5.2. Best Practices in Sweden

As have been seen, the Swedish state has played a major role in building Swedish society and culture through its redistributive politics during the 20th century. In many country comparisons, Sweden stands out with this history, which lead trust in government to be the highest in the world. Also, today, Sweden is one of the countries recognized as relatively well prepared for the coming demographic change, economically that is. There are still several challenges when it comes to social interaction between generations, something that risks inter-generational learning and social security overall as elderly usually creates a trust-based and open atmosphere for the young to grow and develop. In addition, we have also observed that intergenerational solidarity is relatively less emphasized on the micro and mezzo-levels of society. Therefore, the following analysis of best-case practices bases on the macro-dimension of intergenerational solidarity. The subsequent paragraphs will highlight some of the benefits of a strong state actor and how the Swedish system has come to work that well.

First, we need to mention the pensions. Sweden has had public pensions in place for over 100 years, but their structure have not always looked the same. There seems to have been a continuous debate on how to organize the system best and continuous reforms of the system has allowed the flexibility needed for the changing environment. Although the processes have been centrally steered with the government imposing clear rules, it always seem to have been an open debate in society (cf. Marier, 2008), something that have made people involved in the process but also allowed them to get onboard when big trade offs, such as paying high taxes today for the benefit of elderly, and counting on the next generation to do the same. The Swedish nation seems to be driven by this sort of pragmatism, which is an important feature when it comes to making critical decisions that have implications far beyond any single generation's lifetime. Politically, there has been a focus on building consensus when it comes to the long-term challenges, making the majority of involved parties agree in order to create a stable environment for how to handle the issues of an aging population and how to provide for them. Pragmatism and consensus have allowed long-term solutions that have still been open for modification, and as a matter of fact have been altered several times. This is a healthy system that also creates trust between the electorate and the public authorities.

Likewise, the elderly care also shows signs of pragmatism. After having being focused on institutionalization of elders, Swedish citizens reacted to cases of mistreatment by demanding better facilities and management. The public authorities grasped this quickly and responded by coming up with the home care system. Institutionalization was still more common, but as the public had demanded more freedom of choice, the government was not reluctant to create this new dual system. Not only has it allowed elders to have more power over their own life and lifestyle, it has also proved a good move economically. Thus, both the public finances as well as the citizens have profited. This clearly shows the benefit of having an open dialogue between public institutions and the general public. This is of course facilitated by Sweden having one of the most transparent public systems in the world. The principle of public access to official records supports the citizens in knowing what officials and institutions are doing. It stipulates that all documents and records created by the government, national courts or any other authority are open to the general public as long as it is not covered by secrecy, which is difficult to get on a document. This rule allows the population to hold individuals and organizations accountable for their actions, and it fosters the important and continuous conversation between the state and its citizens. Additionally, it upholds agility within the system, which has shown to create a strong platform for these societal functions.

With the demographic trends putting increasing pressure on both household economies as well as the state's finances, building consensus and understanding between actors within

society has proven a good way to ensure a sustainable system. Of course, as we have seen, upholding the intergenerational solidarity on one level, the macro level in this case, is not enough but the interaction needs to take place across all three dimensions. However, the state has an important role to play, as redistributive policies are key for the economic and health aspects of the aging population.

6. Concluding Remarks

This paper has shown that demographic change directly affects countries and their intergenerational solidarity. Both in economic and cultural terms, as it challenges a nation in providing for a larger share of elderly people while at the same time it changes social structures and thus how these issues are dealt with.

The two examples discussed here clearly depict how different spheres affect intergenerational solidarity. The countries' history and long-term development trajectory have clearly come to create the state's role and its current prevalence and influence. Consequently, the two public welfare systems have been structured differently and the reliance on public support differs between the two countries. Also, the domestic cultural setting has impacted how intergenerational solidarity is seen and upheld—not the least the mere social interaction. Thus, in Slovenia, where the current national borders and state has only been around since the 1990s and not surprisingly has been more in the background, a great amount of initiatives have been developed on the mezzo level. In Sweden, on the contrary, where the state has been a stable and quite professional institution for the majority of the 20th century, a great confidence has been granted the public sphere, and most people rely on state solutions and expect only that they do minor additional contributions for their closest family and friends.

However, having a balanced solidarity on all levels would of course be optimal as no level can fully provide everything a person need when aging. For example, we have seen that the well-developed formal institutions in Sweden do not adequately capture the dimension of social interaction something important for the mental well-being of any person, and extensive voluntary engagement in the civil sector as is common in Slovenia will not provide enough security for a healthy aging. We therefore argue that these two countries have something to learn from each other. Slovenia should look at the Swedish example of building trust and consensus around these long-term challenges on the macro level, and Sweden should look at Slovenia's vivid mezzo-level activities to get inspired for how to promote the 'soft side' of the intergenerational exchange.

Yet, as countries are embedded in their own culture and history, it is impossible to find a 'one-size-fits-all solution' for intergenerational solidarity, and we cannot not simply copy paste ideas from Slovenia to Sweden or vice-versa. That means that in one way, the kind of

qualitative comparisons made in this paper are inherently flawed. We acknowledge this as one of the biggest limitations of this study, but would still argue that what is highlighted here can provide insights and inspiration for state actors. It must also be mentioned that the interdependencies between the macro, mezzo and micro levels are difficult to quantify, and in this paper we have more or less assumed that when one level is less prevalent another one would 'fill its place'. This might not be true of course, but the data gathered for this paper suggests something similar for Slovenia and Sweden. Whether this is generalizable, however, we will leave unsaid.

What we *can* conclude, nevertheless, is it that transnational exchanges of international solidarity experience between countries with as diverging backgrounds as these two are important when anticipating and mitigating demographic challenges. As the aging populations are an issue within the whole EU, we want to promote an increased collaboration within this field in order to come up with sustainable and resilient solutions. The theme year for active aging during 2012 was a good initiative, but did not reach the broad public to a sufficient extent. We would therefore ask of the EU actors as well as domestic politicians to emphasize the topic more. The grandparent boom is one of the major challenges of today and citizens need to actively think about their own role in it and decide how they want to see their parents age, how they themselves want to age, and how they want their children to age in the future. Only with a broad recognition will change be made possible, because in the end, the intergenerational solidarity is the responsibility of each and every one of us.

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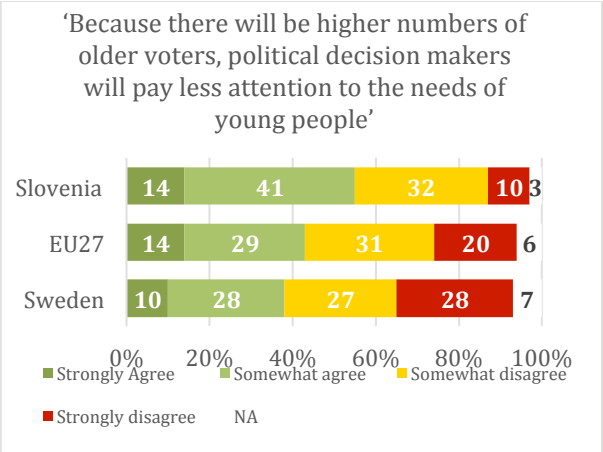
8. Appendix

Political



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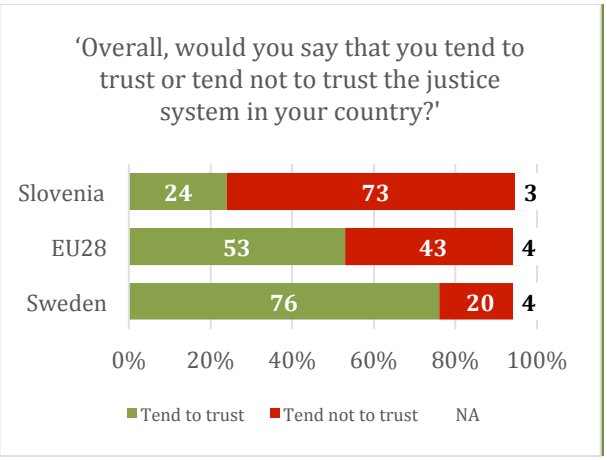

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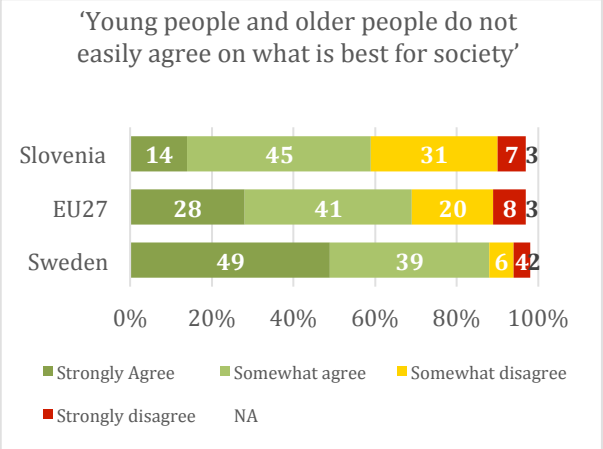

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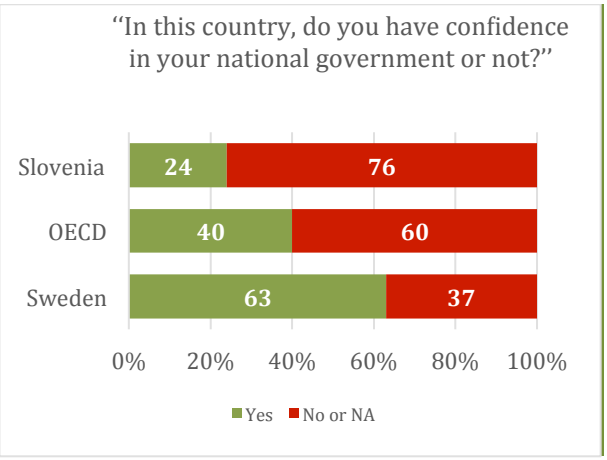


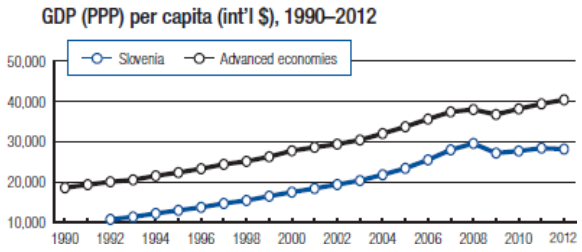
SOURCE: OECD GLOBAL COMPETITIVENESS REPORT (2014)

Economic

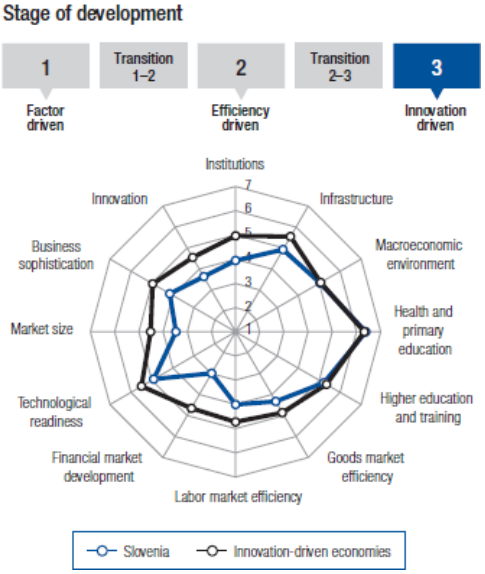
Global Competitiveness Report on Slovenia (World Economic Forum, 2013)

Key indicators, 2012

Population (millions)	2.1
GDP (US$ billions)	45.6
GDP per capita (US$)	22,193
GDP (PPP) as share (%) of world total	0.07



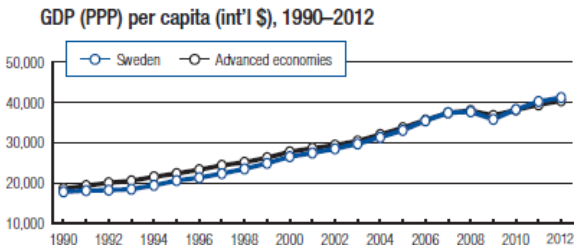
	Rank (out of 148)	Score (1–7)
GCI 2013–2014	**62**	**4.3**
GCI 2012–2013 (out of 144)	56	4.3
GCI 2011–2012 (out of 142)	57	4.3
Basic requirements (20.0%)	**37**	**5.1**
Institutions	68	3.9
Infrastructure	36	4.9
Macroeconomic environment	53	5.0
Health and primary education	17	6.4
Efficiency enhancers (50.0%)	**62**	**4.1**
Higher education and training	25	5.2
Goods market efficiency	62	4.3
Labor market efficiency	106	4.0
Financial market development	134	3.0
Technological readiness	33	4.9
Market size	83	3.5
Innovation and sophistication factors (30.0%)	**49**	**3.9**
Business sophistication	58	4.1
Innovation	40	3.6



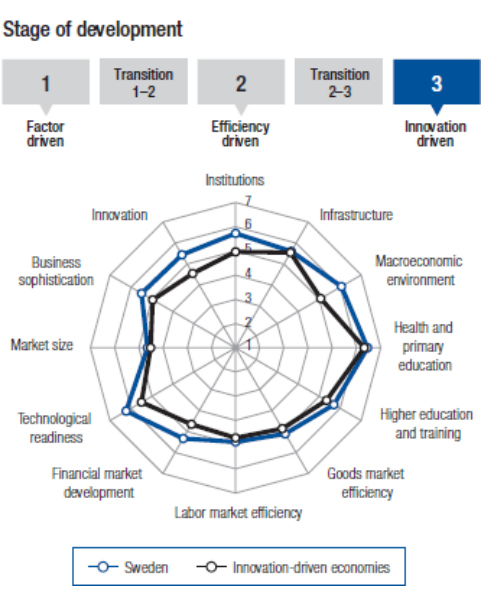
Global Competitiveness Report on Sweden (World Economic forum, 2013)

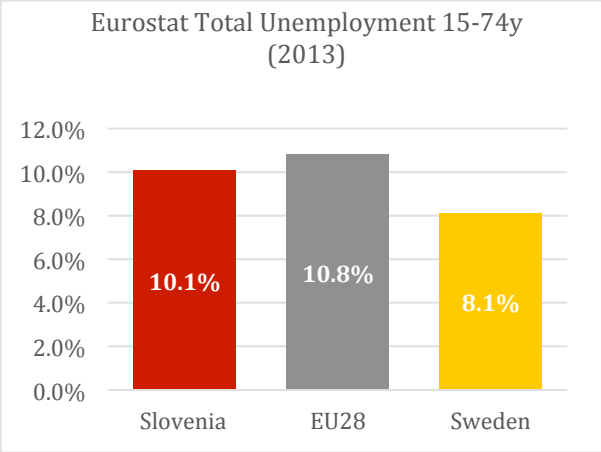
Key indicators, 2012

Population (millions)	9.4
GDP (US$ billions)	526.2
GDP per capita (US$)	55,158
GDP (PPP) as share (%) of world total	0.47



	Rank (out of 148)	Score (1–7)
GCI 2013–2014	**6**	**5.5**
GCI 2012–2013 (out of 144)	4	5.5
GCI 2011–2012 (out of 142)	3	5.6
Basic requirements (20.0%)	**8**	**6.0**
Institutions	5	5.7
Infrastructure	20	5.6
Macroeconomic environment	14	6.1
Health and primary education	13	6.4
Efficiency enhancers (50.0%)	**7**	**5.3**
Higher education and training	8	5.7
Goods market efficiency	12	5.1
Labor market efficiency	18	4.9
Financial market development	8	5.3
Technological readiness	1	6.2
Market size	35	4.6
Innovation and sophistication factors (30.0%)	**5**	**5.5**
Business sophistication	7	5.5
Innovation	6	5.4





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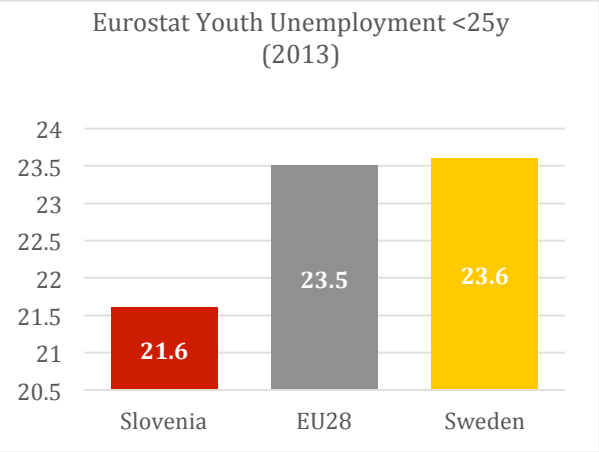

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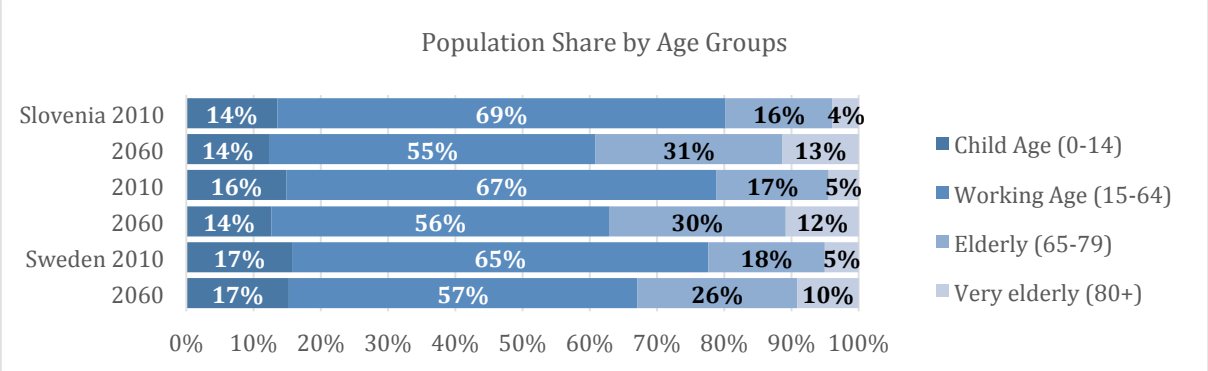
Social



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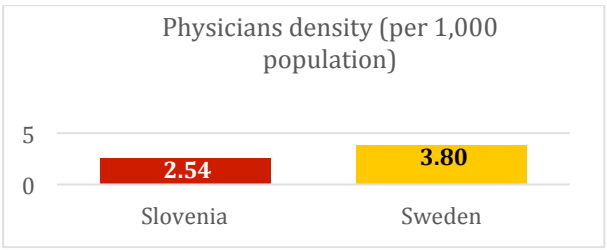

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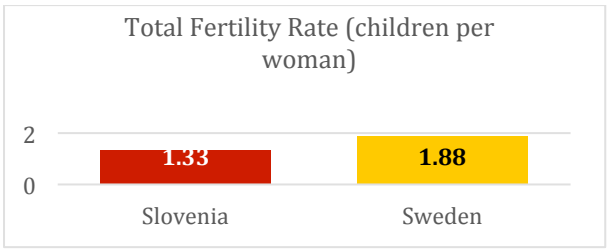

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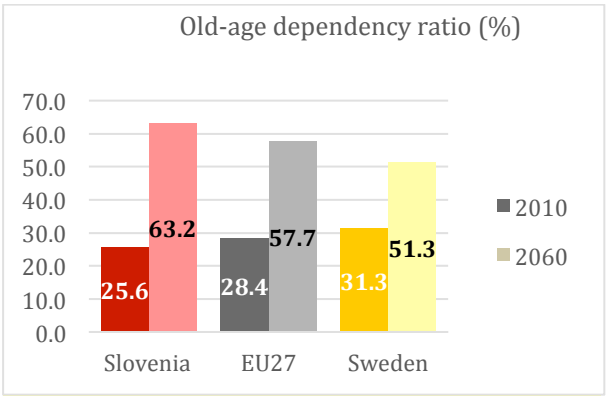

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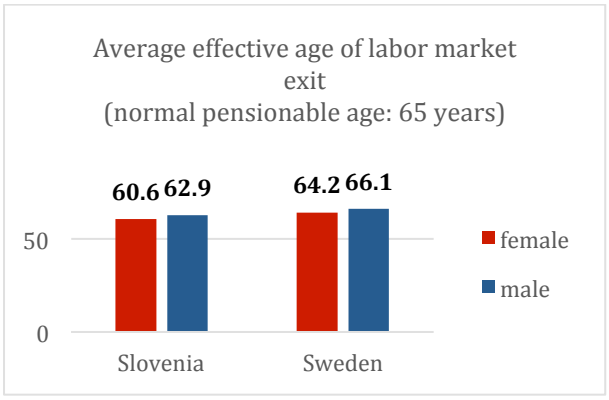
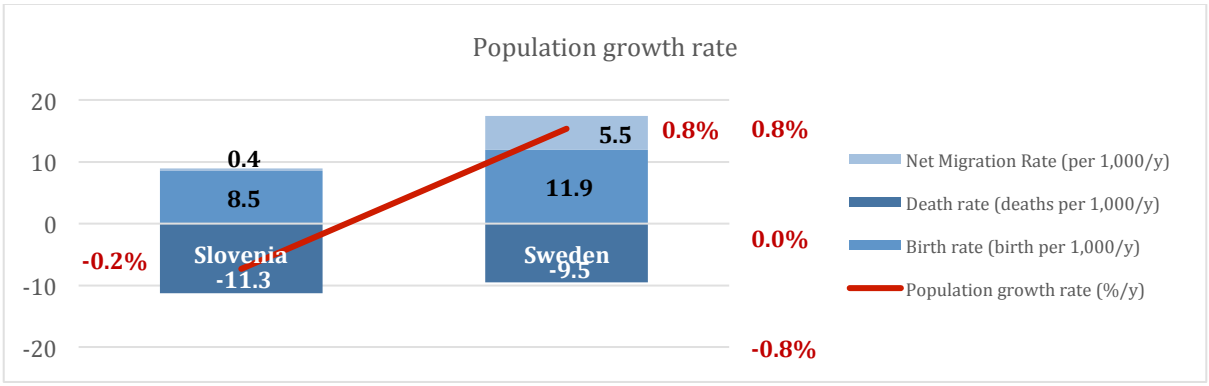


SOURCE: OECD (2013C)



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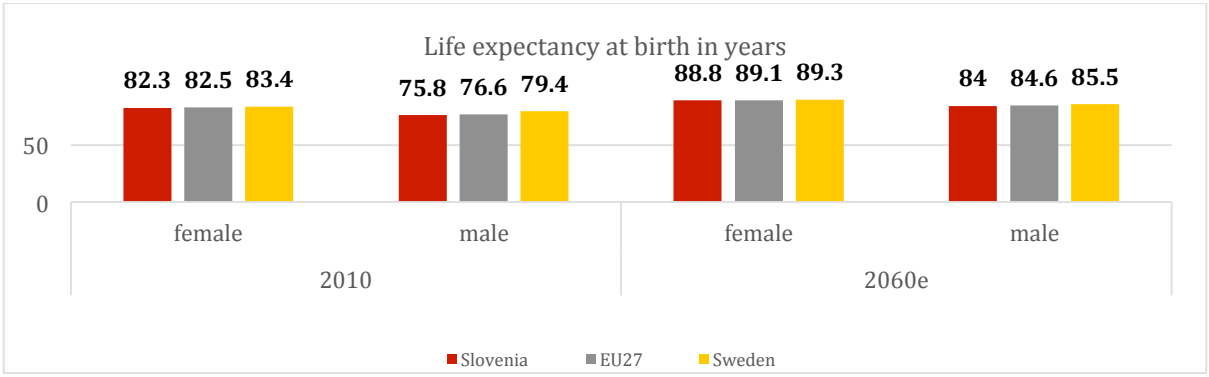

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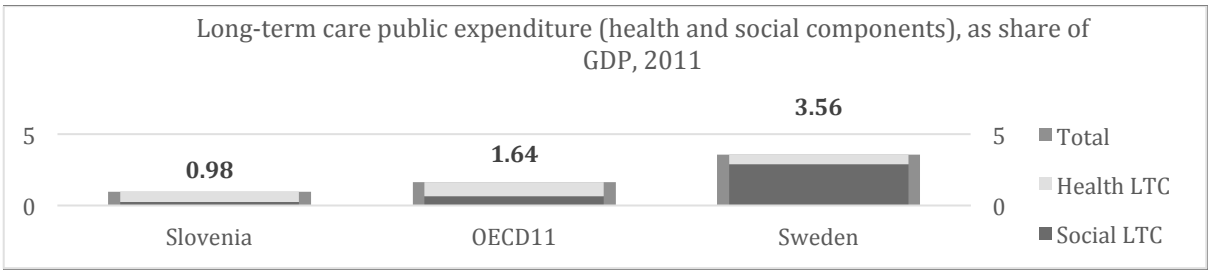

SOURCE: OECD (2011)

Universität St.Gallen

Megatrend 'Global Demographic Change' –
Tackling Business and Society Challenges in 2030 and beyond

Demographic ageing
Impact on the entry of young people into the work force - Switzerland vs India

Lecturer: Dr.med. Hans Groth, MBA

Submitted by

Radha Krotthapalli
Olha Kurylo
Pascal Vuichard

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1. Introduction

> "While developed countries have advanced the furthest in this demographic transition, most developing countries are expected to be similarly affected in the decades ahead, although it is difficult to predict how closely the effects will resemble those in the more developed countries."
>
> *John Sendanyoye, ILO Commerce Sector Specialist, ILO, 2014.*

A continuing global fertility decline, medical advances along with increased longevity created one of the most significant demographic shifts in human history. Population aging has become a phenomenon of great importance. Every day nearly 200,000 people in the world cross the 60 year-old mark. The problem of disproportionate aging demographics has become one of the most relevant issues of our century. Nations affected by this phenomenon are subject not only to demographic but also to various economic, social and psychological changes.

In the economic arena, population aging affects GDP growth, savings, investment, consumption, unemployment, tax policy and the transfer of knowledge and experience from generation to generation. From the social perspective, population aging affects family composition, living conditions, housing needs, migration trends and epidemiological as well as health care needs. Effects on the political power may be seen in changes of the election results and the system of political representation.

In this paper we will discuss the effects of the population ageing on the young people's entry into the working world. Ageing of the population means reducing the inflow of young people into the economy, as well as increasing demographic burden on the working population, with all the ensuing consequences. The theoretical part will examine the global labor market situation and factors that influence the employability of the youth. It will provide the comprehensive overview on the youth unemployment in different regions and how it evolves with the growing ratio of older people in the labor force. The empirical part will analyze the young people's entry into the labor market through the focus on one developed country and one developing state. The analysis will start with Switzerland, followed by India, and conclude with a comparison between the two states. In the last section we summarize the theoretical framework with our empirical findings and give a short outlook on how our analysis can be improved.

2. Theoretical Part

In this part of the paper we study the theoretical framework for analyzing the particularities of youth employment. First we examine the unemployment trends in different regions and then we focus the attention on the employability of young people. We emphasize the relevance of ageing workforce and discuss the channels through which it directly or indirectly affects the young people's labor market participation.

2.1. Overview by region

Today, society is faced with a grim and complicated labour market situation. The aggregate unemployment rate is reaching historical heights in both developed and developing economies. Only the United States among the OECD countries has started to reduce their unemployment rate, but progress in this domain has been stagnant (Gurria, 2013). The Japanese government has also acted upon the employment malaise with a special employment-stimulating program, which has achieved some success. Europe, however, continues to suffer from a persistent unemployment increase that nearly reached 12% in 2013 (ILO, 2013). If we consider developing countries, such as China or India, their economies are growing at a slower pace. These economies are the engine of the global economic growth. The distress in economic growth in its turn has a significant effect on the state of employment (Global Agenda Council on Ageing Society, 2012). Ensuring economic growth is a primary objective that secures the stability of the labor market.

One important fact about the average unemployment indicators is that they often hide a disproportionate representation of the victims of unemployment (Gurria, 2013). It is easy to conceal very important concerns behind the numbers, such as youth unemployment. The fact that youth unemployment is usually a few times higher than the average unemployment is of a great concern to policymakers (ILO, 2014). Young workers happen to be affected the most by the uneven economic recovery. According to the global statistics, approximately 74.5 million of young individuals (age 15-25) were suffering from unemployment in 2013. The unemployment rate for youth is 13%, which is three times higher than that for the adults (4.5%). International Labor Organization estimates show the upward trend in youth unemployment for almost all the regions in world (see appendix 7.1: Figure 6).

The European Union and other developed countries experience an improving 18% youth unemployment rate, followed by South-East Asia and the Pacific with a 14% rate. The best labour market situation for young people can be found in South and East Asia with a 10% unemployment rate (see appendix 7.1: Figure 6). In developed economies the sluggish statistics reflect a rise in temporary employment and an increase in discouragement among

the youth. In the developing world the youth unemployment is accompanied by low quality, unofficial and minimum paid jobs (ILO, 2014).

2.2. Factors that influence Labour Market Entry for Young People

To understand why young people are so disproportionally affected by such economic and social trends it is important to determine the causal link between youth unemployment and the aforementioned trends.

High education expectations and skills mismatch:

One of the most significant shifts in trends relating to youth unemployment is the homogenization of minimum education standards required, particularly in the West. Whilst it is known that less educated youth has a lower chance of finding a job, a high education attainment does not guarantee employment (Gomez & Salvator, 2008). Sometimes, companies struggle to find the skills they require for their currently available positions, because academic training is often not well designed to the necessities and realities of the labor market. Together with the lack of vacancies available in the market, the economy is faced with a great number of highly qualified unemployed young individuals (ILO, 2012a). This particular effect resonates more strongly for the female demographic as well, as women, on average, tend to have a more difficult time obtaining job placements than their male counterparts (Roudi, 2011).

Prolonged unemployment consequences:

The persistence in the growth of the youth unemployment might result in formation of a so-called “lost generation”, the term first used to describe young people serving in the Second World War. The young men, who lived through the war early in their life, struggled to integrate themselves in society upon their return. Such individuals led a marginalized lifestyle and often were victims of depression and suicide. Although today young people do not reach such extremes due to unemployment, they are bound to experience an identity crisis if finding a job remains difficult for a long time. (Bell & Blanchflower, 2010)

It is not only a matter of people being unemployed, but more importantly it is the fact that people stay unemployed for a lengthy period of time. The long-term unemployment is known to severely decrease the chances of finding a job in the future, especially if right after graduation from a university (von Wachter, Song & Manchester, 2009; Kahn, 2010). The theoretical skills that are not complimented by practice are considered of an inferior quality to the potential employer. In addition, a slow economic growth combined with particularly high youth unemployment leads to an increase in inequality in the society and implies serious long-term social consequences.

Increased share of elderly experienced workers:

Young people entry into the labor market is strongly affected by the social and demographic trends, such as population growth and aging of societies. For example, the populations in regions such as Sub-Saharan Africa and Middle East are growing remarkably fast (ILO, 2010). High population growth rates result in the increased number of individuals who start to participate in the labor force and as a consequence, a higher competition among the workforce. Combined with the economic decline, the young workers are not only the last ones to be hired, but also the first ones to be fired by the companies (ILO, 2012b). The reason that the youth is stuck in the "last-in first-out" cycle is because it is more expensive to dismiss the older employees. This cycle is even more prominent in the face of economic ambiguity and hiring uncertainty. Moreover, young individuals with an average lower training and experience accumulate fewer skills than older workers, and also tend to be employed on temporary, not permanent basis. All of these factors put young individuals at a disadvantage versus the older workers (ILO, 2012c).

At present, societies experience a growth in retiring individuals. At first sight, it seems to be good news to the young graduates seeking jobs. However, this does not reflect reality. In theory, for a person from a younger generation to get a job, one person from the older generation has to retire (Gurria, 2013). When the population growth is high, the idea of a constant employment rate is only satisfied under the assumption that there are new jobs continuously being created by the market. Taking into consideration the aforementioned slow economic growth, we know this not to be the case. Furthermore, the phenomenon of the ageing population implies that people from the older generations have to stay in the labor force for a longer period of time (ILO, 2009). As a result, more individuals retire and fewer individuals are working. Therefore, people need to work longer and the economy needs to create increasingly more jobs.

Due to the aging population phenomenon, the share of the older workers in today's market will increase. Therefore it is expected that the labor market patterns will change along with the demographic patterns. Older employees usually stay in positions for a longer period of time; therefore the average level of tenure in the labor market will increase.

Previous research overview:

Economists tried to estimate the shift in employment rate due to the changes in the proportions of age groups in the workforce. After the baby boom period in 1985, birth rates dropped in several OECD countries. Empirical studies regarding the age structure changes and its effects on the employment rates failed to find evidence that the decreased ratio of youth accommodates the market entry for young people. Instead, they found a positive relationship between the ratio of old individuals in society and unemployment rate for the youth. Barwell (2000) showed in his research that while the aggregated unemployment rate

for Great Britain has decreased, no such trend was found for the youth unemployment rate. Korenman & Neumark (1997) in their extensive cross-national analysis also found the worsening youth labor market outcome accompanied with the decreased amount of young adults in the workforce. According to their analysis, one possible explanation could be that once the share of the old workers becomes sufficiently large, the labour market starts to adjust to this new age composition and the employers show preference for more experienced and skilled workers, rather than the young individuals who have yet to acquire these qualifications. In order to foresee the future labour market changes one also needs to account for the characteristics of the different cohort groups. Gottschalk (2001) studied the future demand for the old cohorts using the analogy of aging "baby boomers". He argued that the older workforce has a more differentiated skill set than that of the career starters and therefore the demand for older workers will differ across industries and sectors. According to his prediction, older workforce would still occupy the high-skilled jobs. For the positions that require fewer skills and more flexibility, employers would favour young workers, because the older individuals may lack the ability to adjust to the on-job changes such as new technological requirements.

Our approach:

It is argued that the impacts of the aging labor force might vary for different generations. Individuals born in different time periods are bound to experience different upbringing, educational attributes, job opportunities and prospects. Intergenerational attitudes towards life and work will differ. Moreover, societies are distinct with respect to economic, political, cultural, historical and demographic backgrounds. Therefore it is important to recognize that the unique effects of aging population on the youth employment cannot be studied in the global context. In order to have an in-depth insight into how this phenomenon shapes the young individual's entry into the working world in both developed and developing economies we analyze two different countries: Switzerland and India.

3. Empirical Part

In this section the focus lies on the two cases of Switzerland and India. The question of how the entry of young people into the working force is influenced by the ageing population is addressed for both cases. In order to have a coherent structure and also a basis for comparison the authors focussed on two main influencing factors: education and migration. Other country specific factors are also discussed in the two case studies. In a third part the different social and economic costs arising both in India and in Switzerland are discussed.

3.1. Case 1: Switzerland

In order to evaluate the topic of the entry of young people into the work force and the influence of an ageing population the following topics are of special interest for Switzerland: the level of education and how it is going to differ in the future and the topic of migration and mobility and how it is going to evolve.

Overview:

If looking at the demographic situation of Switzerland today, it is important to note, that Switzerland still has a relative high population growth rate of 0.5-0.8% compared to other countries in Europe (Bundesamt für Statistik, 2014). Another crucial factor is the positive balance of migration, which is also mainly responsible for the population growth in Switzerland. Migration has also the positive factor of cushioning the ageing process, with the median age of less than 30 years the immigrants have a younger age pattern as the population in Switzerland (Haug, 2006). The age structure of Switzerland is changing a lot (see appendix 7.2: Figure 9). After the death of the baby boomers the demographic ageing is supposed to slow down, in fact since the 1970s each generation features more or less the equal population as the generation before (Bundesamt für Statistik, 2013). It is expected that the sides of the pyramid will be constricting and therefore the age pattern adapting a more cylindrical form.

In order to correctly interpret the evolution of the ageing society, it has to be considered that the ageing of the population is not only an increase in numbers of older people but also a shift in the balance between those ageing groups (see appendix 7.2: Figure 10). It can be observed, that the ageing quotient will overtake the youth quotient around the year 2020 (Bundesamt für Statistik, 2010). The generation ratio presents the society with various challenges. The population of the young age groups has to be maintained in order to grant a balanced age pattern. If not there need to be mechanisms to adapt to this new demographic reality, for example political measures to cope with the deficit of labour (Wanner, Sauvain-Durgerdil, Guilley & Hussy, 2005). In the near future it is unlikely that the young age groups can be maintained in order to balance out the age pattern, therefore solutions are needed, especially regarding our young generation and the work force (Dixon, 2003).

Labour market Switzerland:

In this part different aspects of the labour market in Switzerland are discussed including the importance of education and the impact of migration and mobility.

Education:

Education is a very important factor regarding the topic of entering into the work force. On a personal level the education level has a significant impact on your employment perspectives.

The education level of the total population of Switzerland is likely going to increase over the next years (Bundesamt für Statistik, 2013). The percentage of people with no further than the compulsory education is going to decrease heavily in the next years, both for the 45-64 years old and also for the 25-44 years old, as can be seen in the figure below. There is a difference between the Swiss population and the foreign population in Switzerland. For the foreign population the percentage of 25-44 years old without more than the compulsory education is significantly higher than for the Swiss population. A further outlook for the foreign population is difficult to make since it depends on various aspects, for instance a successful integration process.

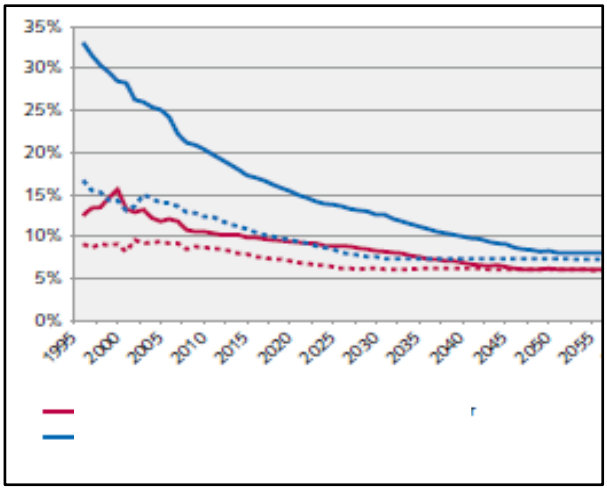

Figure 7: Development of the percentage of the adult population without an after-compulsory education (Bundesamt für Statistik, 2010, p.43)

Regarding the development for people involved in education a precise forecast is difficult to make. It strongly depends on the overall population growth, if there is a strong population growth the number of people enrolled at a university will reach the number of 300'000 by the year 2030. If on the other hand the population growth is weaker the number of people enrolled at a university could fall under the number of 150'000 students. (Bundesamt für Statistik, 2010)

Migration and Mobility:

As already mentioned before, the impact of migration cannot hold back the problem of an ageing society even though the median age of the immigrants is below 30 years (Haug, 2006). Nevertheless migration and mobility are very important aspects regarding the topic of the labour market. Cross-border migration is only one part of the mobility; another important factor is the inner-country migration (Staatssekretariat für Wirtschaft SECO, 2013). The migration of Swiss residents in the country itself from one part to the other is an interesting factor to look at.

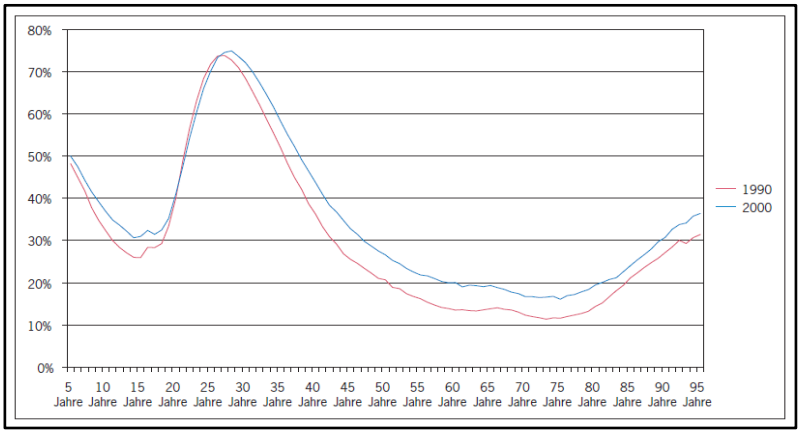

Figure 8: Percentage of people who changed their domicile over the past 5 years according to age for the years 1990 and 2000 (Wanner et al., 2005)

In the year 2000, the percentage of people who have moved in the past five years shows to be at around 70% for the 25 years old. The mobility of older people in the range of 50 years old and onwards shows to be significantly lower. Migration over short distances occurs more often in older age groups, young people tend to move more on an interstate or international level. But an increase over the past years can also be seen in the age group of 50 years old on upwards (Bundesamt für Statistik, 2012).

Intermediate summary:

The higher expectancy of life which can be observed in Switzerland has not only the effect that the percentage of older people has increased but that also the balance between the youth- and the ageing quotient has shifted towards the ageing quotient. It can furthermore be observed that the inner-country mobility, most notably for the segment of 50 years onwards, is increasing.

People entering retirement today are better educated compared to previous generations. This is true both for men and women. This effect can also be observed in the labour market where the employment of men above 50 years is at a level of 80%, which is significantly higher than in the neighbouring countries.

Outlook and take away:

In the next 30 years the share of the retired people will steadily increase. Pension fund institutions have to take this new reality into account which includes new factors such as the insecurity in the economic development or the impacts on the labour participation as well as the ability of the employees to pay the fees (Botkine & Rausa-de-Luca, 2008).

As seen above, migration cannot compensate the demographic ageing process in Switzerland. Nevertheless very interesting developments occur out of the migration process. For much of the past the migration workers in Switzerland were a movable population, wherever there was a crisis the migration population was able to absorb the shock. The new

migration behavior indicates permanent settling also after the retirement, the impacts of the freedom of movement and residence agreement with the European Union and the family reunions have the effect that in future crisis the fall back on the foreign work force is not possible anymore (Staatssekretariat für Wirtschaft SECO, 2013). Also the special needs of the growing share of older people have to be taken into account. As of the year 2035 the share of the people aged 65 or above compared to the total population will stabilise. This does not mean that they had the same favorable conditions as the previous generations. Even more since through technological developments the importance of experience diminished (Botkine & Rausa-de-Luca, 2008).

Not only for older people is the situation changing but also for the young generation looking to enter the workforce. On the one hand side the increased inner-country mobility of the older people and on the other hand the longer employment of the share of 50 or above is decreasing their chances in the labour market.

3.2. Case 2: India

In order to examine the same question as for the case of Switzerland the factors of education and migration are also analyzed for India. Furthermore other country specific factors such as the employment in the non-farm sector are looked at.

Overview:

India is the second most populous country in the world and will witness significant demographic trends such as population ageing or the demographic dividend. India has a population of 1.23 billion with a median age of 27 years in 2014 (IndexMundi, 2014). India has been identified as one of the fast pacing emerging markets and is experiencing the demographic dividend. India is expected to be the fastest growing economy in 2030 (appendix 7.3: Figure 12) (Ernst & Young [EY] & Federation of Indian Chambers of Commerce and Industry [FICCI], 2013).

The Indian demographics indicate that there was a population boom from 300 million in 1950 to 1 billion in 2000 (appendix 7.3: Table 1). The average population growth rate from 1995-2010 has been 1.5% and is expected to decline in the future with decreasing fertility rates. Table 1 data indicates that India continues to reap the benefits of significant demographic dividend. The effect of ageing society is yet to be seen in the country. The population pyramids indicate that ageing population would have negative implications on the country post 2050 when the population below 20 years starts declining (appendix 7.3: Figure 13).

Labour market India:

In this part different aspects of the labour market in India are discussed including the current and future labour market conditions, the importance of education and the impact of migration.

A median age of 32 years is expected in 2030. The implication of this is the huge supply of young workforce in the country every year compared to the people retiring every year as can be seen in the figure 3 below. In the time span between 2010 and 2030, India's total working-age population is poised to rise from 749 million to 962 million, accounting for about 28 per cent of the increase in the world's total working-age population over the period (CRISIL, 2010). To achieve sustainable economic growth, there needs to be a significant demand for workers in services and manufacturing sectors which have higher productivity rates compared to the agricultural sector.

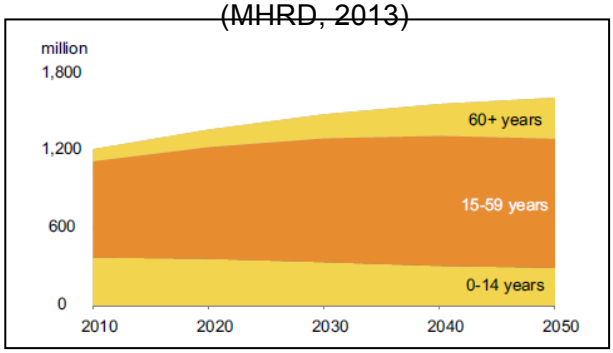

Figure 3: India's working age population (UN World Population Prospects, 2008)

Education:

Education is the most important criterion for employment especially in the non-farm sectors. The literacy level in India is 74.04% with a male literacy rate of 82.14% and a female literacy rate of 65.46% according to the 2011 census. This is a notable improvement compared to the 64.8% literacy rate in 2001 but it is still well below the global average literacy rate of 84.1%. (UNESCO, 2013)

The increasing Gross Enrolment Ratio (GER) and number of higher educational institutions would boost India's position as the global leader in supply of talented workforce. The GER has more than quadrupled compared to the figure in 1980 (EY & FICCI, 2013).

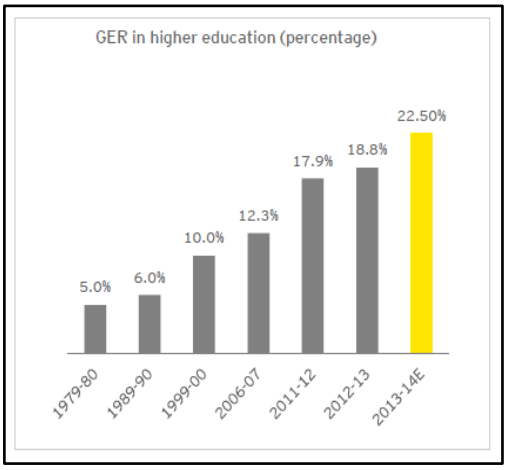

Figure 4: GER in higher education, India (MHRD, 2013)

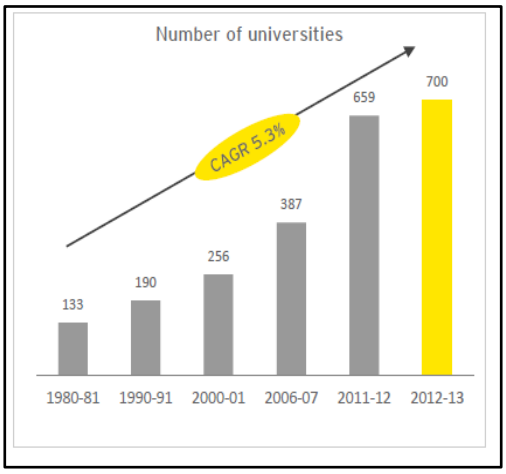

Figure 5: Number of universities / institutions registered, India (MHRD, 2013)

The improving literacy rate (appendix 7.3: Figure 14) and the increase in number of institutes for higher education in Figures 4 & 5 implies that the younger generation entering the workforce have higher educational qualification.

Migration:

Migration plays a crucial role in the job marketplace, as a higher number of immigrants in the working age group results in an increasing competition for the native young workers. India ranks among top ten countries in the world for highest in-migration. According to the data from Population division of United Nations Department of Economic and Social Affairs, 5.4 million people of foreign origin are living in India in 2010 raking 9th in the world (Shrinivasan, 2012). Also, India ranks fourth in terms of number of emigrants in the world. The most popular emigrants' destination continues to be U.S.

The interesting fact to note regarding the immigrants is that 97% of them are from south Asian countries, 3 million from Bangladesh, 1 million from Pakistan and 0.6 million from Nepal. The diplomats, investment bankers and technology experts account to mere 3% (Shrinivasan, 2012). The majority of immigrant workers are low wage workers in areas such as construction and agriculture.

Internal Migration:

Migration within the country in search of employment would lead to competition in the job marketplace. The migration levels are the highest in age group of 33-59 years (appendix 7.3: Figure 15). The survey behind the reasons for migration reveals that in age group of 15-32 years, 70 percent of people migrated because of marriage while only 10 percent migrated for reasons of employment. (Government of India, 2010)

Another notable phenomenon is that 72 percent of migrant workers are employed in rural areas. The states of Delhi, Gujarat, Maharashtra and Karnataka receive 64.1 percent of the intra state migrant workers in the age group 15-32 years. The states of Bihar and Uttar Pradesh account for 59 percent of migrant workers who leave their place of usual residence. (Chandrasekhar & Sharma, 2014)

Employment in non-farm sectors:

Industry and service sectors are projected to account for 92 percent of GDP by 2030. The growth in the above non-farm sectors requires skilled workforce. A Majority of the workforce in the agricultural sector can be categorised under the informal sector of employment (appendix 7.3: Figure 16).

The shift from agriculture based jobs is shown in the table 2. There is a shift in agriculture employees from 258.93 million people in 2005 to 244.85 million people in 2010. The interesting observation from the table is that these 14 million jobs from agriculture have not been added to the manufacturing sector which has also lost 5 million jobs. (Pannu, 2013)

Sectors	(In mn) 2004-05	2009-10	% increase/ decrease
Agriculture	258.93	244.85	5.4 ↓
Manufacturing	55.77	50.74	9.01 ↓
Mining	2.64	2.95	11.7 ↑
Electricity, gas & water supply	1.3	1.25	3.84 ↓
Construction	26.02	44.04	69 ↑
Services	112.81	116.34	3.12 ↑
Total	**457.46**	**460.22**	**0.6** ↑

Table 2: Distribution of jobs across from 2004-10, India (Planning Commission, 2013)

On the other hand, the construction sector has seen an increase of jobs by nearly 18 million. This indicates that people have migrated from agriculture to construction thus remaining in the de-skilled labour category. This has severe implications for the economy in terms of low productivity and growth. There will be around 63.5 million new entrants to the working age group between 2011 and 2016, the bulk of whom will be in the relatively younger age group of 20-35 years. With only minimal regulation in the informal sector, the young workforce in this segment would find it difficult to attain jobs due to older population continuing to work (Planning Commission, 2013).

Outlook:

India, with its promising growth rate has been attracting foreign and domestic investors across industries to increase their footprint. As companies continue to expand, they offer multiple employment opportunities to the young workforce. Thus aging population does not significantly affect the employment opportunities for the younger generation. The companies in India are witnessing employees from three or four generations working together, bringing in subject expertise and innovative mindset to the workplace. Analysing the impact of migration, it is seen that both internal and external immigrants work predominantly in low skilled sectors. As the number of jobs in the agricultural sector is decreasing, it would be difficult for the young workforce to gain employment as there is no official retirement age in the informal sector.

3.3 Social and Economic costs

Also there are costs on the young workforce due to population ageing in the country. There are social and economic costs to be accounted for by the society. Also in this part the authors limited their scope in order to respect the limits of this paper and focussed on two main areas in order to be able to compare the two countries: age dependency ratio and impacts on pension funds.

Switzerland – Economic costs:

Switzerland's age dependency ratio foresees a worsening concerning the youth. Therefore the economic costs for the youth are increasing in the future (Morgan Stanley, 2014).

Switzerland – Social costs:

The strong ageing process in Switzerland increases the amount of people in need for pensions. Even though older people are likely going to stay longer in the workforce, this cannot outweigh the ageing process. This results in huge social costs for Switzerland, since the pension funds are not covered anymore (Botkine & Rausa-de-Luca, 2008).

The pressure on Switzerland will increase depending on the decisions made regarding the topic of migration. Especially today's environment with various political decisions regarding the topic of migration upcoming is difficult to predict regarding how high the social costs are going to be. What can be said is that the pressure on the education system as well on the pension fund system is going increase and cause social costs over the next years.

India - Economic costs:

India's declining age dependency ratio implies that as the working age population (15-64 age group) increases, income levels rise and therefore also a boost in savings is going to occur (Morgan Stanley, 2014). The reduction in age dependency would lead to a lower consumption which in turn might have negative implications on the growth rate (appendix 7.3: Figure 17). However the rising income of the working age population would offset this effect on the growth rate.

Thus the decline in age dependency results in a virtuous cycle of rise in savings and investment rates. The rise in the investment rates induces GDP growth rate (appendix 7.3: Figure 18). This implies that economic costs for the working age group are reducing over the coming years. This trend of lower costs would continue until the demographic structure shifts with the share of the age group above 64 years increasing.

India - Social costs:

The institution of family in India is well developed with certain obligations and duties. This includes caring for the elderly. With increasing nuclear families, migration and dual working careers, it is becoming difficult to fulfil the obligations. This has resulted in rise of nursing homes in India. The social security system in India is still under development. Nearly 90 percent of Indian population is not covered by any pension system. In the past decade, the government has revamped the pension system by creating a National Pension Scheme (Davanzo, Dogo & Grammich, 2011). The lack of affordable healthcare is an issue of serious concern for the aging population. This results in creasing social costs for the working age population.

4. Comparison and Interpretation

The effect of aging population in both economies Switzerland and India has been described in the previous sections. In this section the comparison between the two economies would highlight the trends and different drivers influencing the entry of young workforce.

Education:

The trends in education are similar in both economies (see appendix 7.4: Figure 19). Organizations are becoming more and more flatter (Krenn & Oehlke, 2001) with impacts on the Swiss young and middle age group as they find less growth opportunities. As mentioned in previous section, the literacy rate in India is still below the world average, but there is a steady improvement over the decades. The rising literacy rate increases the skilled workforce in the country.

This can also be seen in the unemployment figures. Switzerland with an already vey advanced education system has a steady unemployment rate, whereas in India the unemployment rate is decreasing with improvement in the education sector (see also appendix 7.4: Figure 24). As India is a developing economy, the increase in killed young workforce is being absorbed by the existing and new companies expanding their reach in Indian markets. Due to new companies and expansion plans of existing companies in India, the growth opportunities for the young workforce in India is higher compared to their Swiss counterparts.

Migration and mobility:

The driving factors for migration are in stark contrast for both countries (appendix 7.4: Figure 20). Switzerland witnesses a significant migration with a median age of below 30; however, they are not as highly skilled as the Swiss labor force. The inner-country mobility of especially the older people shows a shift in the characteristics of the older workers. This fact differs between India and Switzerland, as the inner-mobility of older people in India is still relatively small.

The majority of immigrants in India are from South Asian countries for employment. The notable fact that the workforce is unskilled finds that the bulk of the workforce in this segment works in sectors of agriculture and construction. The lack of regulation in these informal sectors implies that there is no official retirement age. As highlighted in earlier sections, the fact that the jobs in informal sector have been declining over the past decade coupled with the lack of regulations makes it difficult for unskilled young workforce to find employment. Additionally, the trends of internal migration in earlier section, suggests that marriage not employment is the driving factor. The reason of marriage for migration indicates the impact of culture and society on the young workforce.

Economic and social costs:

The economic and social costs show some accordance but also differences for both economies (appendix 7.4: Figure 21).

As India is continuing to reap the benefits of demographic dividend, the economic costs are expected to lower due to declining age dependency and rising income levels. The lower costs combined with increasing savings rate enhances the GDP growth rate. Post 2040-2045 when the demographic structure shifts with the decrease in the population of young age groups, a reverse trend is expected for the costs. The same cannot be said for Switzerland, as there are stable conditions and no boost nor decline can be predicted. Also strong family institutions in the Indian society result in responsibilities for caring for the elderly within the households. However, the weak social security system and lack of affordable healthcare is expected to increase the social costs. For Switzerland the social security system is also a major social cost. The demographic ageing is putting heavy pressure on the pension funds, since there are more and more people obtaining retirement provisions and less people paying into the funds. This increases the cost on the young people similarly to India.

5. Summary

In this section we align the theoretical framework with the key empirical findings of our research. We review how the phenomenon of aging population manifests itself in Switzerland and India. We provide the criticism of the approach that we have used to research the effects of aging population trend on the young people's entry into the working world and conclude with suggestions for the further studies.

5.1. Summary

In this paper we examined the relationship between the aging population and young people's labour market outcomes. We studied this relationship in Switzerland and India. In the first case we observed that the improved longevity and the increased share of elderly in the workforce accompanied the aging population phenomenon. We found migration to be a very important characteristic of Swiss population. The aging trend is being mitigated by the inflow of the younger immigrants, the majority of which, however, do not possess high skills. The country experiences the rising inner country mobility as well as cross-country mobility, which signals about the change in the characteristics of the older workers. In our theoretical framework we have discussed how young workers carry an advantage over the older workers by being more adaptable to the changes in the labour market needs. Increased flexibility of the elderly workforce suggests that this factor holds only partially and the labor

market indeed starts to adjust to the shifts in the age composition of the labor force. In the second case, we detected the occupational move from agriculture to construction, which is driven by the low-skilled workforce. In the developing economies, such as India, the low-skilled sectors remain informal and unregulated; therefore the non-existence of the official retirement age does not improve the labor market outcomes for the low-skilled youth. The previous theoretical research is confirmed in this pattern. In the high-skill sector the higher share of the elderly does not prevent the young workers entry into the qualified positions. Today more young people in India pursue higher education and companies see a mix of age groups in their employees. After our empirical analysis we have seen that the aging population effects on the youth employment are not the same for developed and emerging economies. While India can experience a temporary improvement of the labor market outcomes for young people, mainly in high- skilled sector, Swiss youth is subject to a high competition with the older workforce.

5.2. Self-Criticism / Limitations

Our analysis was conducted on the basis of only two countries and therefore the generalization of the results might be presumptuous. Also considering the available data we only focussed on publically available data. More precise and accurate data from the respective governments, especially for India showed to be a limitation. Regarding the comparison between the two countries, Switzerland and India, we only focussed on two main factors, which limits of course our analysis. Lastly, this paper does not take into account any approaches to solve the problems discussed.
It would be interesting to examine this research question using proper empirical methods and more different factors for comparison.

5.3. Outlook on Further Research

The topic of the entry of the young people into the workforce is a very broad question and implies different factors. In our analysis we focussed on two main factors, education and migration. In order to come up with a holistic approach to this question, a broader selection of factors need to be taken into account. Through a proper empirical analysis further results can be found and a deeper insight into the topic of the entry of young people into the workforce can be given. In a next step possible solution approaches could be proposed and further examined.

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7. Appendix

This part contains more detailed information and figures about the different sections described above.

7.1. Appendix: Theoretical Part

Unemployment rates 2007-18 by region*

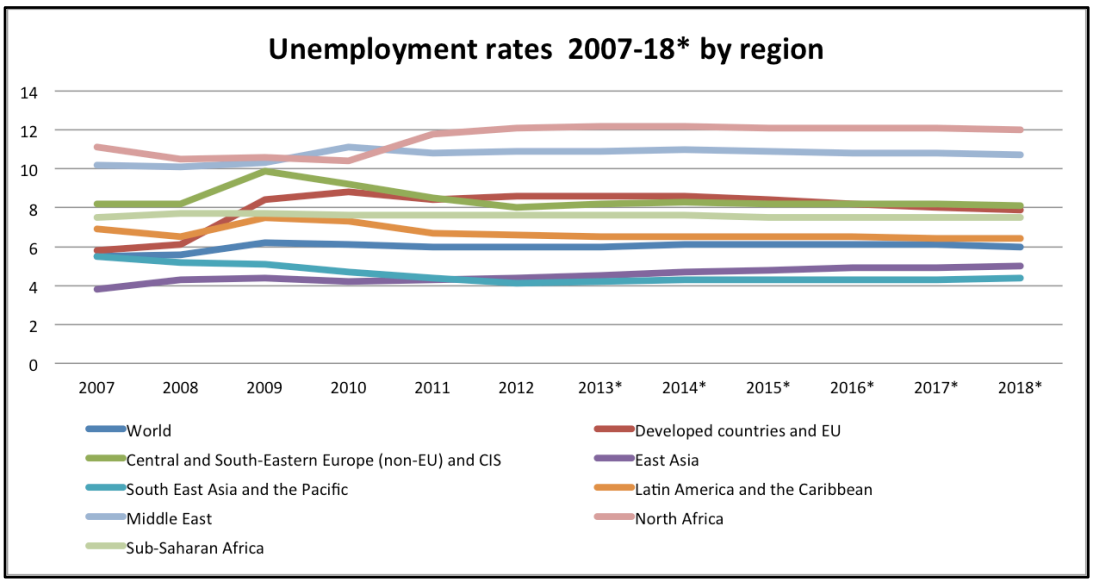

Figure 6: Source: ILO, Trends Econometric Models, 2013

Youth unemployment rates 2007-18 by region (%)*

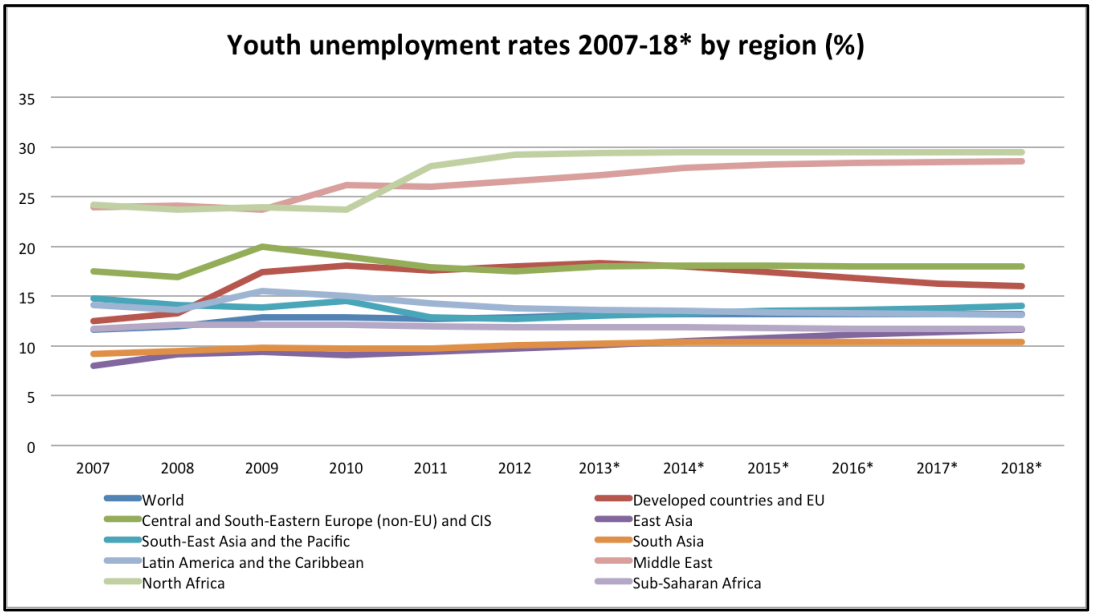

Figure 7: Source: ILO, Trends Econometric Models, 2013

Youth unemployment rate projection by world region (2007-2017)*

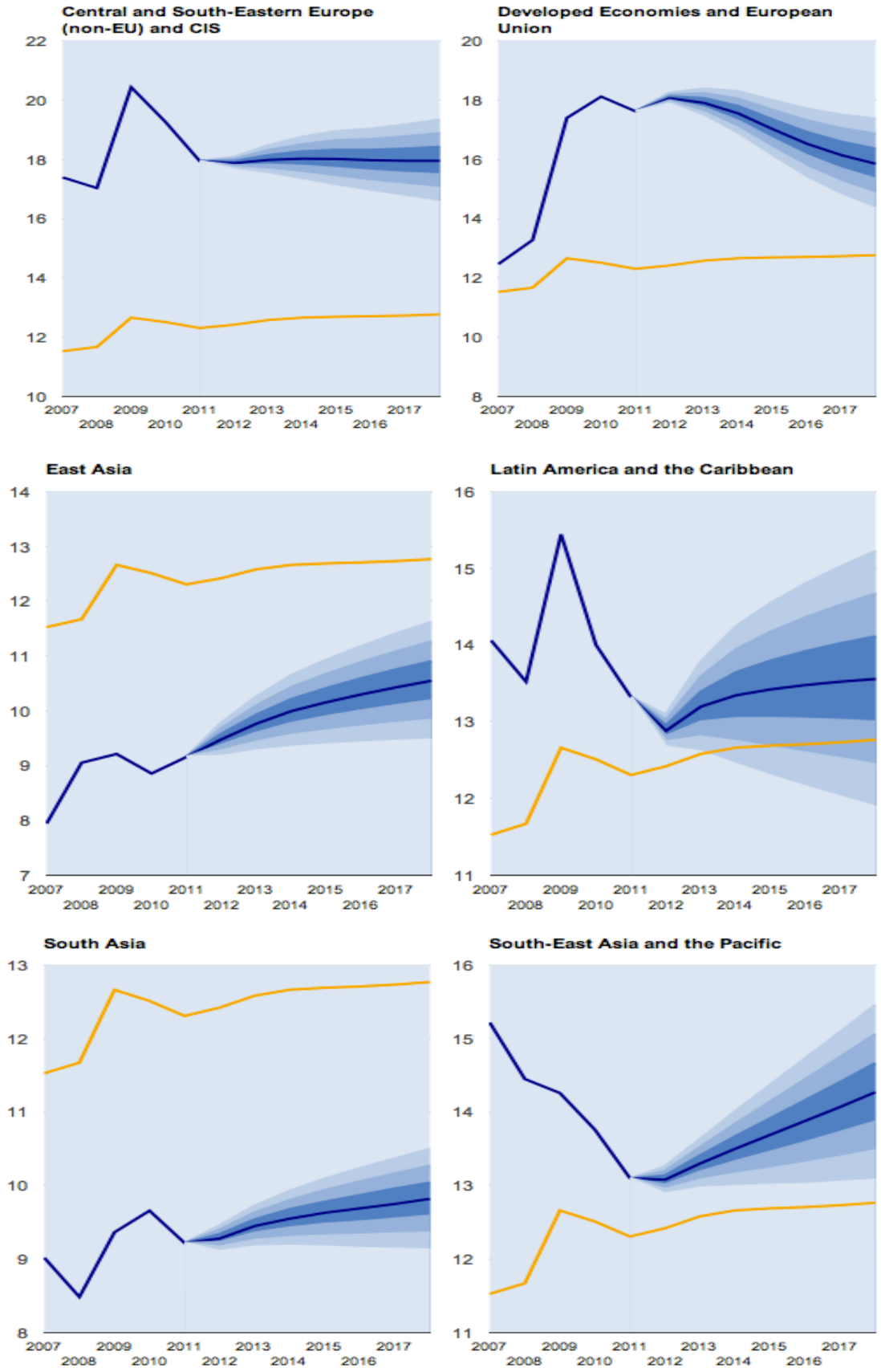

Figure 8: Source: ILO, Trends Econometric Models, 2013

7.2. Appendix: Case 1 Switzerland

Age pattern of residence population in Switzerland in 2006 2020 and 2035

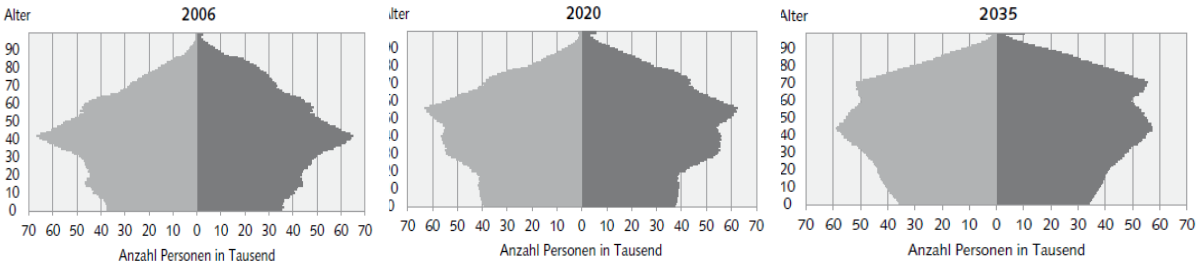

Figure 9: Source: Budesamt für Statistik, 2008, p. 13

As can be seen in the figure above, the move up of the populous generations which were in 2006 around forty years old is significant. Furthermore a small bulge at the 10-19 years old leads to new high of the forty years old in the year of 2035. This dominance is also strongly influenced by the inflow of foreign workers.

Development of the youth-, age- and total quotient over time

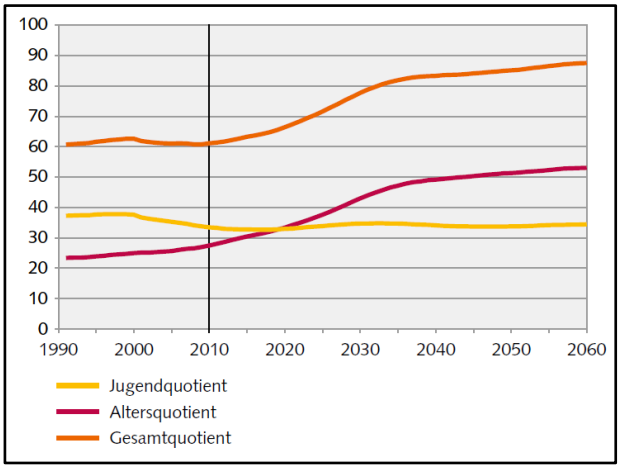

Figure 10: Source: Bundesamt für Statistik, 2010, p. 23

7.3. Appendix: Case 2 India

Real GDP in 2030

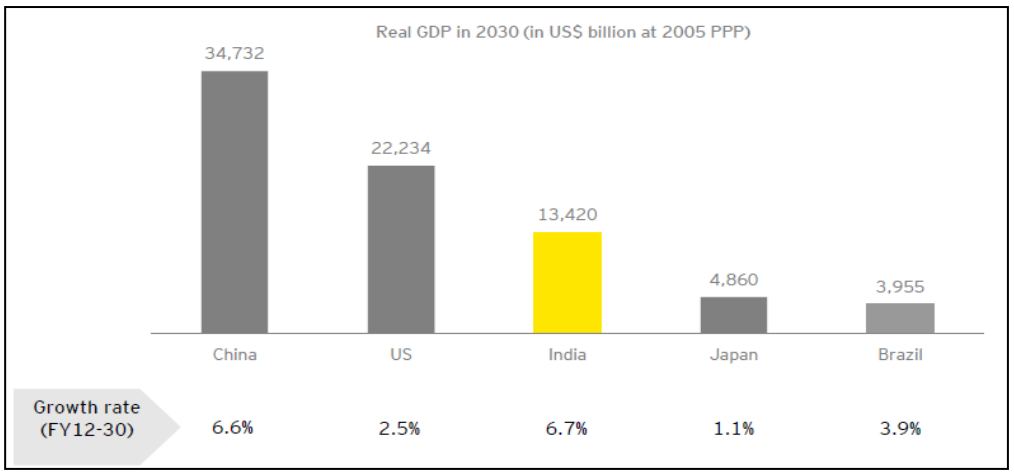

Figure 12: Source: Planning Commission, EY & FICCI, 2013

Population pyramids in India from 1950-2100

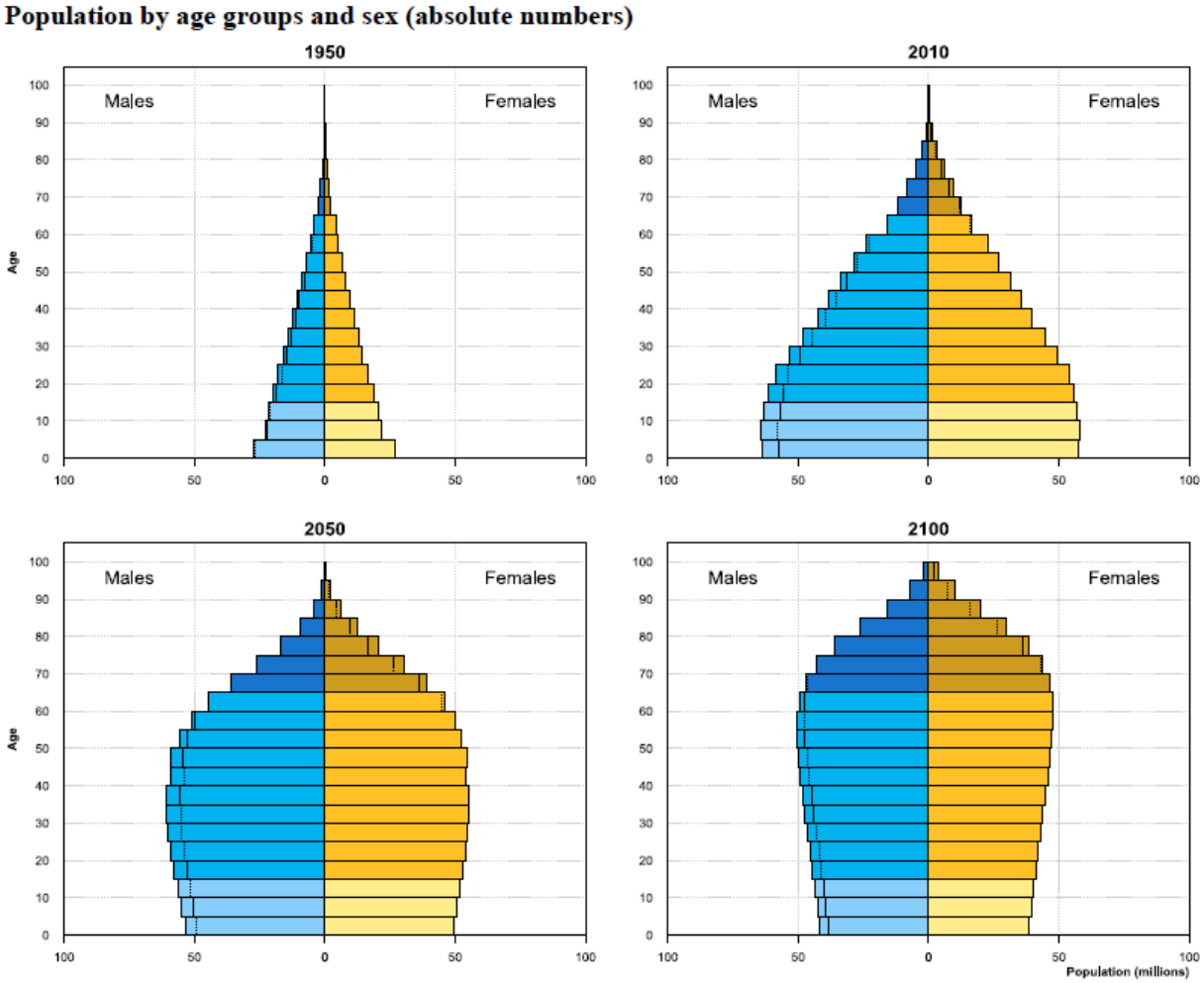

Figure 13: Source: United Nations Department of Economic and Social Affairs, 2012

Percentage of Indian population in 15 -24 years age group with schooling

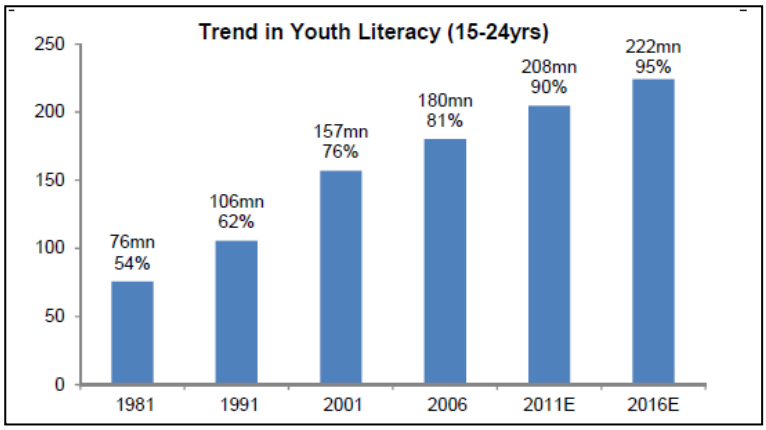

Figure 14: Source: World Bank, CEC, Morgan Stanley Research, 2014

Percentage distribution of internal migration according to age groups

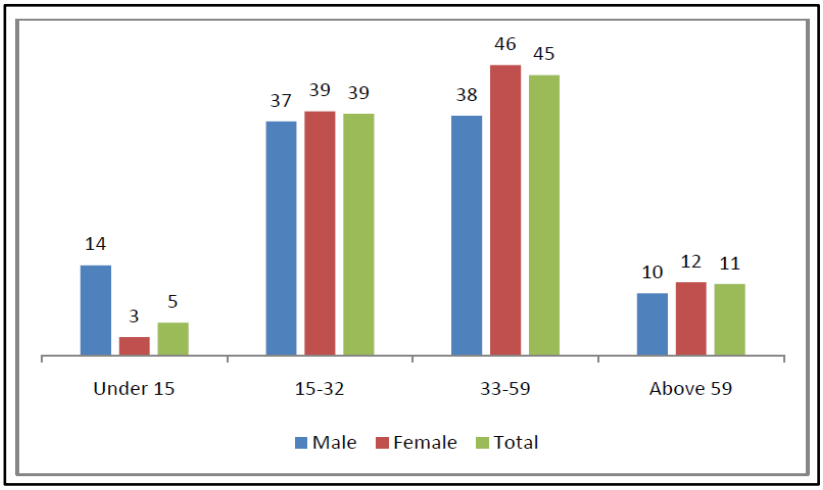

Figure 15: Source: Planning Commission, Government of India, 2010

Percentage of GDP of 3 sectors, India

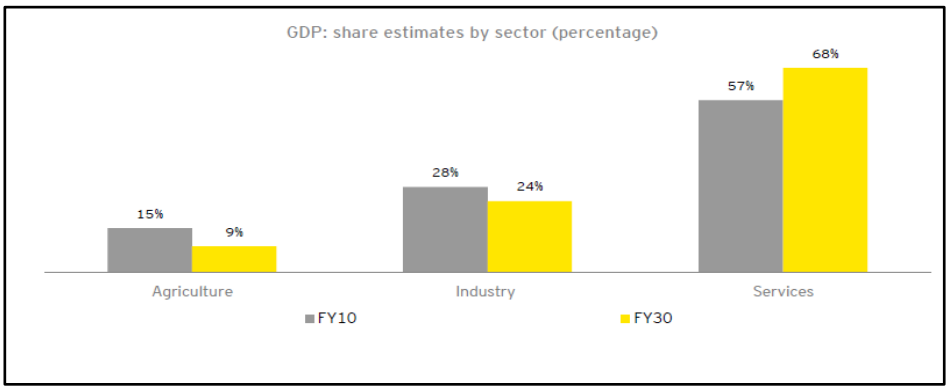

Figure 16: Source: Planning Commission, EY & FICCI, 2013

Share of consumption in GDP tracking age dependency ratio

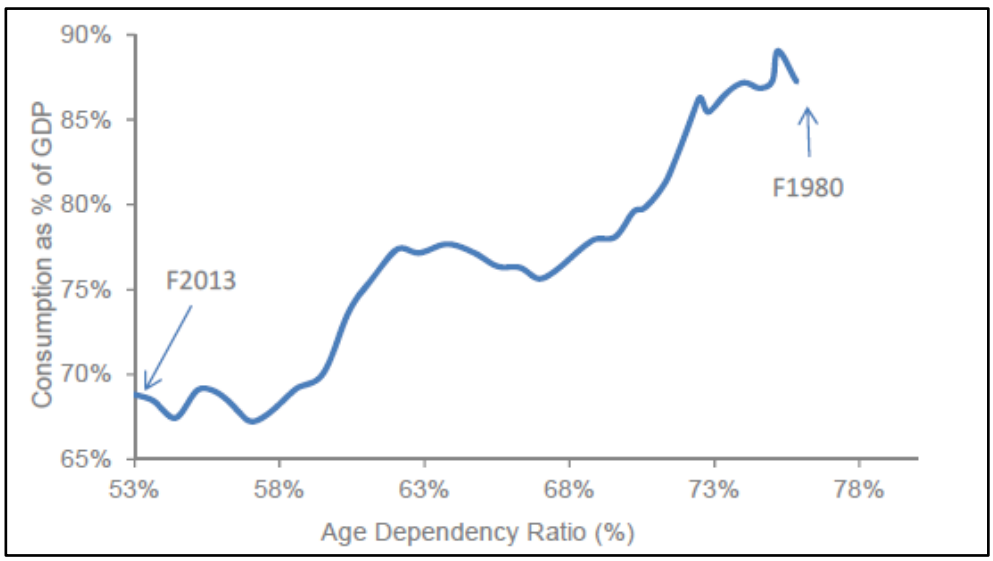

Figure 17: Source : UN Population Database, CEIC, Morgan Stanley, 2014

Improving Age Dependency to Lift Saving Rate

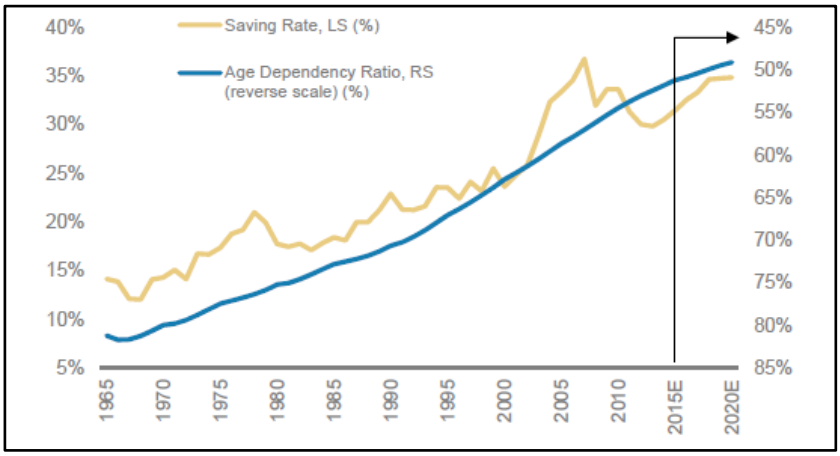

Figure 18: Source : UN Population Database, CEIC, Morgan Stanley, 2014

Demographics of India

Year	**1950**	**1970**	**1990**	**2000**	**2005**
Total Population (thousands)	376,325	555,200	868,891	1,042,262	1,127,144
Year	1950-1955	1965-1970	1985-1990	1995-2000	2000-2005
Annual rate of population change (%)	1.7	2.2	2.1	1.7	1.6
Total fertility (children per women)	5.9	5.69	4.09	3.3	3
Total dependency ratio	68.4	80	70.6	62.8	58.6

2010	**2015**	**2020**	**2030**	**2050**	**2075**	**2100**
1,205,625	1,282,390	1,353,305	1,476,378	1,620,051	1,630,683	1,546,833
2005-2010	2010-2015	2015-2020	2025-2030	2045-2050	2070-2075	2095-2100
1.4	1.2	1.1	0.8	0.3	-0.1	-0.2
2.66	2.5	2.37	2.16	1.92	1.83	1.84
54.4	51.1	49	46.9	47.6	56.8	66.2

Table 1: Source: World Population Report, 2013

7.4. Appendix: Comparison

Gross Enrolment Ratio in tertiary education – India and Switzerland

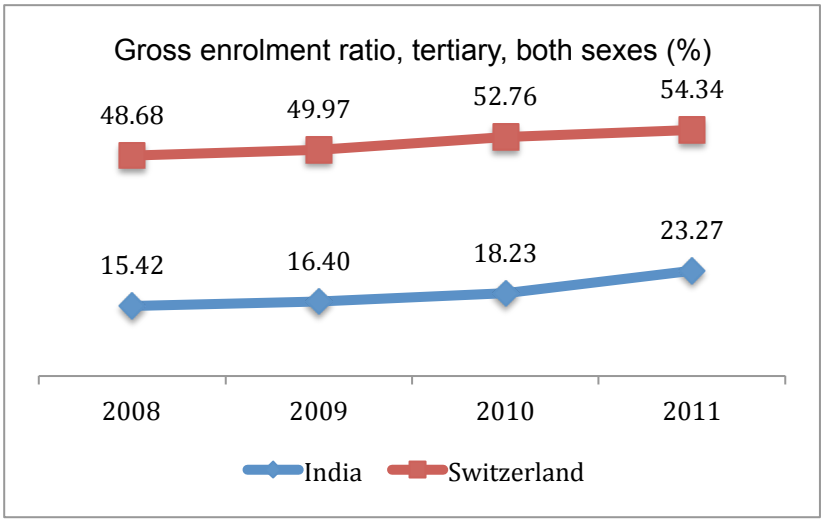

Figure 19: Source: UNESCO Database, 2014

Net Migration Rate (per 1000) – India and Switzerland

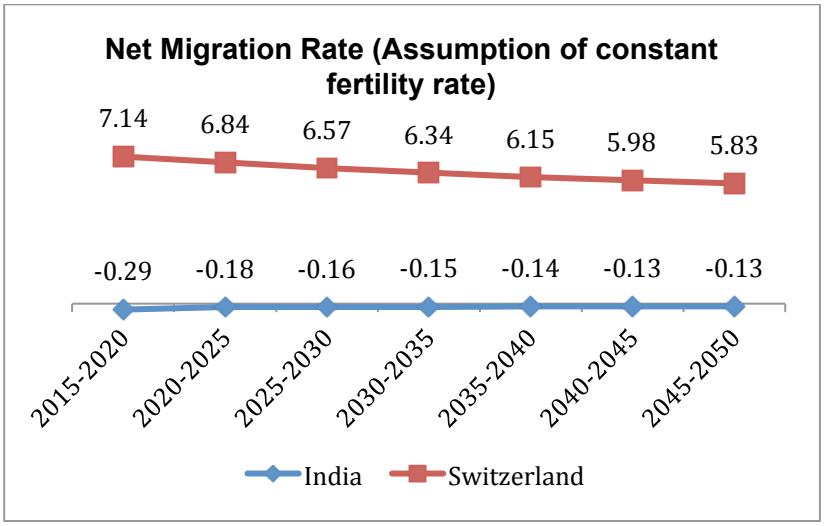

Figure 20: Source: UN Data Bank, 2014

Total Dependency Ratio (%) – India and Switzerland

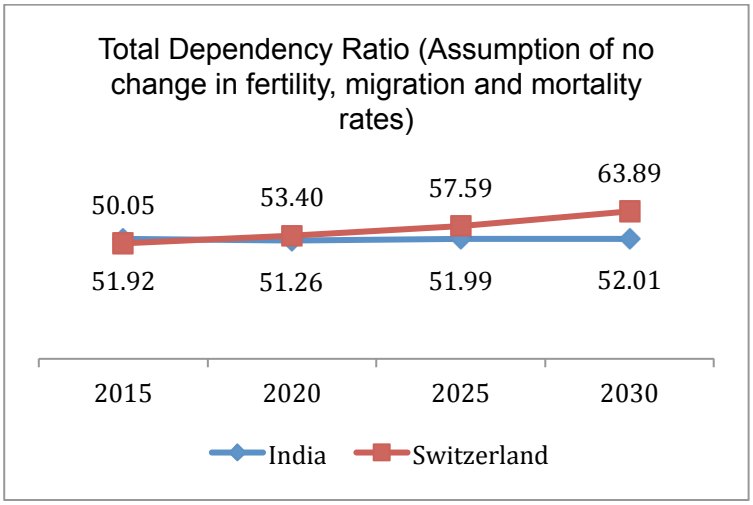

Figure 21: Source: UN Data Bank, 2014

Unemployment rate – India and Switzerland

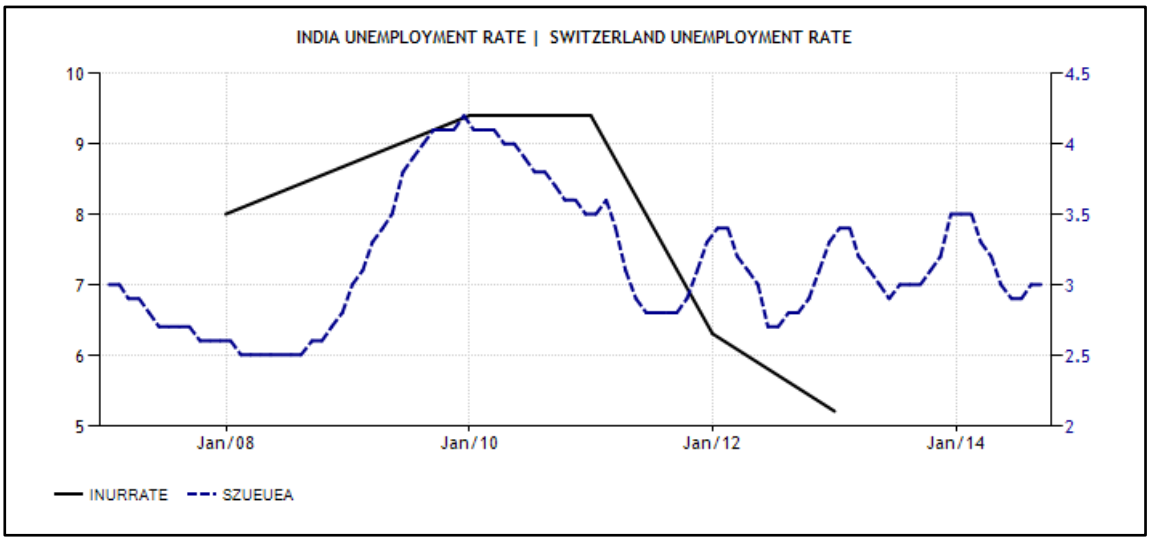

Figure 22: Source: Trading Economics, 2014

III. Contact Details

Students

Karin.bratt@student.unisg.ch

Maja.vidic@siol.net

Max.bredow@student.unisg.ch

Kurylo.olha@gmail.com

Rdh104@gmail.com

Pascal.vuichard@student.unisg.ch

Coralie.grau@student.unisg.ch

Marcel.u.koehler@gmail.com

Mareike.moormann@student.unisg.ch

Yves.terrier@student.unisg.ch

Lars.schnidrig@student.unisg.ch

Dario.lardi@student.unisg.ch

Katharina.nowak@student.unisg.ch

Matthias.becker@student.unisg.ch

Benedict.schneider@student.unisg.ch

Kishore.durairaj@student.unisg.ch

Pia.zimmermann2@student.unisg.ch

Manuela.disch@student.unisg.ch

Querine.bulthuis@student.unisg.ch

Bianca.strasser@student.unisg.ch

Daniel.kunz@student.unisg.ch

Rouven.gruenig@student.unisg.ch

Alexandre.lusenti@student.unisg.ch

Dozent

hgroth@wdaforum.org

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„Our Next World“
at University of St. Gallen

30th and 31st of August 2016

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Word Demographic & Ageing Forum

Kornhausstrasse 18 ◆ P.O. Box 2239
CH-9001 St.Gallen, Switzerland

phone: +41 71 242 79 79
fax: +41 71 242 79 78

info@wdaforum.org
www.wdaforum.org