

MASTER'S THESIS  
UNIVERSITY OF ST. GALLEN

DEMOGRAPHIC CHANGE IN  
JAPAN VS. SWITZERLAND –  
STRATEGIC  
RECOMMENDATIONS FOR  
POLICY MAKERS &  
BUSINESS LEADERS

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## EXECUTIVE SUMMARY

Switzerland and Japan – both highly developed nations – are challenged by a historically unprecedented phenomenon – the phenomenon of a shrinking and rapidly ageing workforce. Both policy makers and business leaders must seek strategies to cope with this phenomenon to prevent the impending decline of the economy and the disintegration of a civil society that has a sophisticated social security system.

Based on 36 high-profile interviews and extensive literature research, this thesis devises strategic recommendations for business leaders and policy makers by applying a comparative method. The interviewee sample was selected deliberately and carefully. The profiles were diverse, consisting of senior managers, professors, an embassy representative, and other labor market experts from both countries.

Although both Switzerland and Japan have similar economic focuses, they are currently at different stages of demographic change. In addition, they have quite different cultures. Consequently, recommendations benefit from cross-pollination based on fundamental differences and surprising similarities in facing and approaching this challenge.

Four levers are identified that are critical in dealing with labor force shortages in the short or medium term:

- labor force participation of older people;
- labor force participation of women;
- immigration;
- productivity gains.

The analysis reveals that both countries have shortcomings in all levers. Japan and the companies located there generally perform unsatisfactorily with respect to immigration and female labor force participation, but rather satisfactorily with respect to the labor force participation of elderly workers. In contrast, Switzerland has generally experienced shortcomings with respect to the participation of elders whereas immigration plays a favorable role. Both countries have faced shortages in productivity growth in the last decade, albeit for somewhat different reasons.

The proposed recommendations address shortcomings in both countries. Consequently, they can benefit from the experience gained from the different applications of the four above-mentioned levers.

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## LIST OF ABBREVIATIONS

BFS	Swiss Federal Statistical Office (Bundesamt für Statistik)
CEDAW	Convention on the Elimination of all forms of Discrimination Against Women
CPIEHR	Caucus for International Exchange in Human Resources
EEOL	Equal Employment Opportunity Law
EFTA	European Free Trade Association
EU	European Union
EVD	Swiss Federal Department of Economic Affairs (Eidgenössisches Volkswirtschaftsdepartement)
FDEA	Swiss Federal Department of Economic Affairs
FOGE	Swiss Federal Office for Gender Equality
FSO	Swiss Federal Statistical Office
GDP	Gross domestic product
HALE	Health-adjusted life expectancy
ICT	Information and communication technology
LDP	Japanese Liberal Democratic Party
METI	Japanese Ministry of Economy, Trade and Industry
MFP	Multiple Factor Productivity
MIC	Japanese Ministry of Internal Affairs and Communication
NIPSSR	Japanese National Institute of Population and Social Security Research
OECD	Organisation for Economic Co-operation and Development
SDA	Schweizerische Depeschen Agentur
SME	Small and medium-sized enterprise
SNF	Swiss National Science Foundation
TFR	Total Fertility Rate
UK	United Kingdom
UN	United Nations
USA	United States of America
WHO	World Health Organization

## 1 INTRODUCTION

Lively descriptions such as “The Age of Aging” (Magnus, 2010) or “Agequake” (Wallace, 1999) paraphrase one of the key challenges projected to be faced by business leaders and policy makers in industrialized countries: a rapidly ageing and shrinking population often referred to as “demographic change”.

Population development is driven by fertility, mortality and migration. Ignoring migration, declining birthrates and soaring life expectancies shift a population’s age structure, ultimately affecting its size. Nowadays, the birth rates in most industrialized countries have contracted and fallen below the level required to sustain their size. Ever increasing life expectancy and the disproportionate size of the baby boomer generation led to a massive increase in the proportion of older people. These developments, mirrored in the working age population, are highly challenging. Not only will the age structure of the labor force shift – large numbers of baby boomers will also soon be going into retirement, which may lead to a massive gap in labor supply that somehow needs to be filled.

### 1.1 RESEARCH PROBLEM AND OBJECTIVES

Both policy makers and business leaders in Switzerland and Japan find themselves in an environment of a rapidly ageing and shrinking population, a development unparalleled in history. The impact on the labor force will be even more severe than on the overall population, which could massively impede the economic prosperity of each country (and the companies located there). This new environment urges decision makers to come up with innovative strategies to either reverse the trend of this shrinking labor supply or to find substitutes.

This thesis intends to identify strategic recommendations for both policy makers and companies based in Switzerland and Japan on how to proactively prepare themselves for the imminent scarcity of skilled labor in their respective country. The recommendations put forward in this thesis will also be of interest to companies in other countries, which may sooner or later find themselves in the same situation. Nevertheless, the recommendations for political and business leaders need to be adapted to the prevailing political, economic, social, and technological environment as well as company-specific characteristics. Furthermore, this thesis intends to foster awareness among both future and current business leaders and policy makers of this important topic. If successful strategies are implemented proactively, they will have an enormous advantage over their competitors (at both corporate and country level).

### 1.2 RESEARCH APPROACH AND PROCEDURE

The research approach of this thesis is divided into two parts: a theoretical and practical part. The theoretical part integrates a demographic and a macroeconomic perspective. The concept of demographic change is introduced to foster a common understanding of the phenomenon, followed by an examination of the demographic development in both countries and its impacts on future workforce supplies. Based on a literature review, the macroeconomic perspective derives a theoretical approach, indicating levers available to companies and governments to prepare for and cope with the challenge of an impending workforce scarcity. This theoretical approach is free from country-specific characteristics, and can therefore be adapted to other countries. The practical part analyzes the situation in

Switzerland and Japan. It takes a business perspective and incorporates two information sources – interviews and literature. The role of literature is not to give a complete overview of the existing literature covering the topics that deal with the levers but rather to complement topics raised by interviewees, thereby pollinating the discussion. Subsequently, the process of interview data collection and analysis is introduced:

- *Data collection:* The one-hour interviews were conducted with deliberately selected interview partners who matched defined profiles. The interviewees included senior managers, professors, an embassy representative and other labor market experts.<sup>1</sup> The interview questions were qualitative and open ended.<sup>2</sup> The advantage of the chosen approach was to grasp the topics that were of greatest importance to the interviewees. The disadvantage may be that not all questions could always be covered by all respondents. Each interview lasted one hour. Interviews with people located in Switzerland were conducted in person; interviews with people based in Japan were carried out by phone. All interviews were recorded to ensure the interviewer had grasped all of the details.
- *Data analysis:* The analysis classifies interviewees into managers (all representing a company) and experts. Interviewees were only separated into groups if the answers to a topic were contradictory or if the topic was raised by one of the two groups. When a relatively homogenous opinion was prevalent, the analysis refers to interviewees (meaning managers and experts). Since most interviewees chose to remain anonymous, the results are presented without referring to names, institutions or companies.

Following the interview analysis and the complementary literature review for both countries, a cross-country comparison is undertaken. This comparison sheds light on any differences and similarities regarding the application of the lever under consideration.

### 1.3 STRUCTURE OF THE PAPER

This thesis is structured into ten main chapters. Following the introduction, Chapter 2 expounds the logic of demographic change to provide readers new to this field with the basic knowledge required to understand the subsequent chapters.

The third chapter elaborates on the developments of labor supply (past, present and future) in Switzerland and Japan. For this purpose, the factors influencing labor supply are analyzed, which is crucial to finding some of the levers to cope with labor force scarcity.

Based on macroeconomic insights, the fourth chapter deduces the four key levers to deal with labor force scarcity and discusses critical issues related to them.

The four subsequent chapters analyze the importance of the levers and their application, as well as country-specific characteristics which may hamper or support their application. In combination with cross-country comparisons, Chapter 9 derives strategic recommendations for business leaders and policy makers.

The final chapter presents an overall conclusion and provides an outlook for future research in this area.

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<sup>1</sup> Appendix 1 provides further detail of the interviewees' profiles.

<sup>2</sup> Appendix 4 shows the interview guide.



#### 1.4 RELEVANCE AND LIMITATIONS OF THE THESIS

The relevance of the research topic is undisputed, given the plethora of publications (scientific papers and monographs) published in recent years. The unbroken interest of the research community is mainly due to the fact that well-developed economies will be challenged for the first time in history with the ramifications of a decreasing and, in parallel, ageing population. Both the economy and the welfare state will suffer from these demographic changes. Nothing can be ruled out in this respect, not even severe civil disorder when the benefits of welfare states are heavily jeopardized, triggered by shrinking tax payments as a result of a diminishing gross domestic product [GDP]. This urgency and relevance seems to have also been recognized most recently by the Swiss government.<sup>3</sup>

The relevance of the present thesis originates from the broad scale of information gathering and its cross-country perspective. Both aspects open new views, enabling recommendations rooted in practice and theory to be extracted. This thesis therefore investigates the daily business to identify the concerns and suggestions of pragmatists in both countries. Additionally, it includes the latest literature to complement this information. The two economies are similar with respect to their concentration on high-tech development and manufacturing, but differ with regard to their culture and the present status of demographic change. This diversity in culture and status enables different approaches to the problem to be considered. Finally, the broad view of many possible solutions reveals interrelations between them, highlighting the possibilities and threats involved in positive and negative co-operative effects, respectively. This thesis features the following limitations:

- *Projections vs. predictions:* The paper draws on knowledge about the future from existing projections. Population projections cannot be exact predictions. The complexity of social reality makes it impossible to predict with certainty. Furthermore, actual projections could alter the future they intend to describe by affecting decision makers. For this reason, projections should always be viewed with caution and seen as conditional predictions of the future based on certain assumptions as premises (Kaneko, 2008).
- *Need for adaptation:* Recommendations build on generalizations gained from interviews and literature. They are therefore unable to take all company or industry specifics into account. The interviews focused mainly on larger, international companies. Consequently, the recommendations given need to be adapted to the company and the environment under consideration.
- *Limited literature collection:* The thesis does not claim to give a complete overview of the literature dealing with this topic. The purpose of the literature research is rather to complement topics raised by the interviewees.
- *Western perspective:* Readers should be aware that the author is of Swiss descent and may therefore not understand all cultural issues in Japan regarding this topic.

As a final remark, I would like to express my deep gratitude to Dr. Hans Groth for enabling me to write this thesis under his supervision, as well as for his support and inspiration. My sincere thanks also go to Professor Dr. Sousa-Poza for his time and willingness to support

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<sup>3</sup> In fall 2011, the Federal Department of Economic Affairs [FDEA] published an initiative aiming at increasing the supply of skilled workers by exploiting the potential of the internal workforce. The initiative localizes backlog demand in seven areas that have to be addressed mainly by education and economic policy. Education policy should implement measures to improve the qualification levels of the whole workforce. Economic policy should implement incentives and support to increase the participation of part-time and non-working cohorts (Federal Department of Economic Affairs (Eidgenössisches Volkswirtschaftsdepartement) [EVD], 2011).

my project. I would also like to thank all my interviewees, who provided me with precious information during our interesting conversations.

## 2 THE LOGIC OF DEMOGRAPHIC CHANGE

The objective of this chapter is to expound the logic of demographic change in order to give readers unfamiliar with the topic of demographic change the knowledge required to fully grasp the argumentation of this thesis. Readers familiar with this topic are advised to skip Chapter 2 and proceed to Chapter 3.

For most of human history, the total population remained below the 10 million mark, and growth occurred at a relatively slow pace. Over the last four to five centuries, however, population growth has gained in magnitude and speed. By 1700, the world population was 600 million and had already doubled just 200 years later. Growth then further accelerated, reaching the second billion within just another century and the third by 1960 (Magnus, 2010; McFalls, 2007). Today (50 years later), the figure is now approaching seven billion. Although the population is set to grow further, the speed of growth is expected to decline. The United Nations [UN] expects the population to reach 9.3 billion by 2050 (UN, 2011c). Yet virtually all of these additional 2.3 billion people who will join the ranks of the world's citizens will be born in developing countries (Magnus, 2010).

The roots of the phenomenon explained above will now be explained. The global population is influenced by two demographic triggers: fertility and mortality. To measure fertility, the concept of the total fertility rate [TFR] is applied. The TFR can be interpreted as the number of children a woman will have, given she survives until the end of her reproductive lifespan – defined as the period between 15 and 45 years. The TFR is calculated by adding the age-specific birth rate over all reproductive ages (UN, 2011b). To achieve a stable population size, industrialized nations require a TFR of 2.1, referred to as the “replacement rate”. The replacement rate is higher in developing countries, due to the higher rate of child mortality. Rates below the replacement rate indicate that the population is decreasing; rates above it indicate that the population is increasing in size. The global fertility rate almost halved between 1950 and 2005 from 5 to 2.6. In many developed countries, the value has even dipped below the replacement rate.

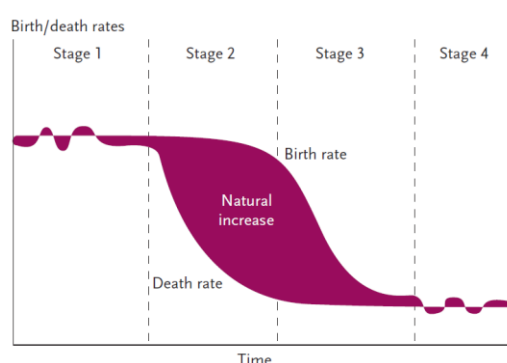
As the counterpart of fertility, mortality is the second cause of population change. Mortality is expressed as the number of deaths per 1000 people in a given year. Comparing death rates between different countries does not shed light on whether people in a certain country live longer or more healthily than those in other countries. A better measure for such a comparison is life expectancy. A person's life expectancy is the number of years a newborn child would live if the prevailing patterns of mortality at the time of its birth remained the same throughout its life (UN, 2011a). The average life expectancy in the early history of mankind was about 20 to 35 years. By 1900, this value has already risen to between 40 and 50 years in industrialized nations. Just over one century later, the figure in the healthiest countries had increased to over 80 years. However, life expectancy has not only risen in developed but also in developing countries over the last century. In the process, the developing countries have even managed to narrow the gap. Much of the historical increase in human life expectancy occurred during the twentieth century, on account of declines in child mortality due to improvements in nutrition, water and sanitation and to medical interventions (Cutler, Deaton, & Lleras-Muney, 2006 as cited in Bloom & Canning, 2008; Wilmoth, 2011). An

examination of the increase in life expectancy in industrialized countries over the past few decades reveals that it is associated with reductions in age-specific death rates due to improvements in medical technology and life style changes (Bloom & Canning, 2008).

Over the course of the last century, fertility has decreased and life expectancy increased. Yet this fact alone does not explain the observed phenomenon of demographic change. To probe the causes, the timely interaction between fertility and life expectancy must be explored.

McFalls (2007) explains the phenomenon of demographic change based on a four-stage model (see Figure 1). In the first stage, the birth and death rates fluctuate around a relatively high level but cancel each other out, leading to a relatively small growth in population or none at all. In the second stage, death rates begin to drop but the birth rate remains high. In the third stage, the death rates are low while birth rates decline to eventually catch up with the death rates. The population grows rapidly during the second and third stages, as the death rates tend to decline prior to the birth rates. The fourth stage is very similar to the first stage, albeit at a much lower level.

**Figure 1: Classic stages of demographic transition**



Source: McFalls (2007)

However, population growth is not the only outcome of the demographic transition. Changes also occur in the composition of the population. The initial fall in mortality rates (which is mainly a fall in child mortality) create a baby boom generation, where there are more young people than in earlier generations. When fertility rates drop, the baby boom comes to an end, leaving a “bulge” in the age structure of the population created by the non-synchronous falls in mortality and fertility. This bulge then works its way up the age structure, increasing the working age population significantly for a limited period of time (Bloom & Canning, 2008). As we will see later on, these “bulges” can be found in both Japan and Switzerland. Until now, only two of the three demographic triggers have been discussed. However, when analyzing the demographic development of a specific geographic area (such as a country), it is important to examine migration as a third trigger inducing demographic change. Migration is able to subtract from or to add to a given population, depending on whether more people move out of or into an area (McFalls, 2007). The difference between immigration (inflow) and emigration (outflow) in an area over time is quantified as so-called net migration. A positive net migration means that more people enter the country than leave it, and vice versa for negative net migration (Kunisch, Boehm, & Boppel, 2011). Migration can play a major role in influencing the growth and composition of the population in smaller countries. According to McFalls (2007), migration is one of the most complex demographic triggers, which can occur in great waves in response to major events. Whether a population is growing or shrinking

within geographical boundaries depends on the sum of the contributions of the three demographic triggers discussed above.<sup>4</sup> The difference between fertility and mortality indicates the natural increase (or decrease) in population. Adding net migration to the natural growth yields the overall population growth (negative or positive) (McFalls, 2007). Fertility, mortality and migration do not only give the direction for population growth but also for its composition (e.g. sex and age).

The aforementioned factors will be analyzed for Switzerland and Japan, enabling insights to be gained into past, present and, finally, the most probable future developments (based on forecasts) of both countries. Subsequently, these insights will be used to reveal similarities and differences of demographic developments in the two countries. The developments taking place in both countries' working age population will then be scrutinized.

### 3 DETERMINANTS OF LABOR SUPPLY AND THEIR CONSEQUENCES

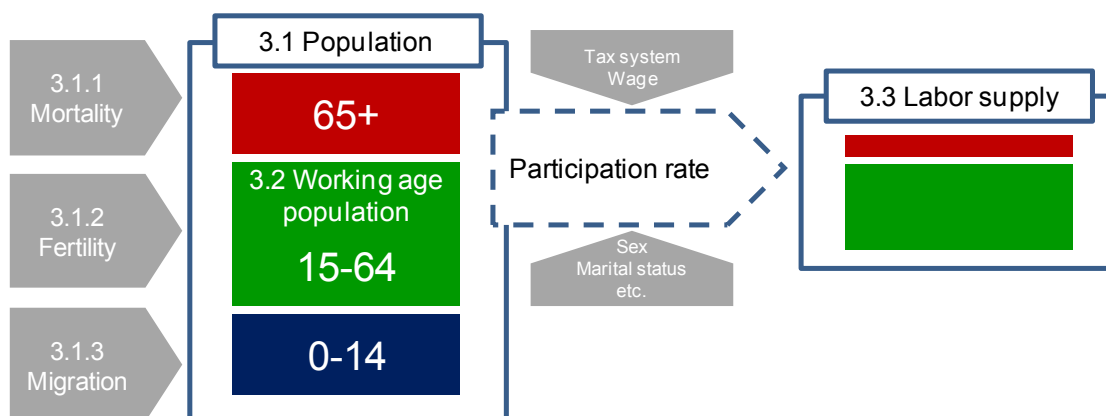
Figure 2 provides an overview of the determinants that influence labor supply and indicates the chapter in which they are discussed.

Mortality, fertility and migration influence the size and composition of a population. Age composition is indicated by the colored areas that divide the population into three age groups (0-14, 15-64 and 65+). Multiplying the overall population by the participation rate, which is influenced by factors such as wages and marital status, yields the labor supply. As with the population, the labor supply is also characterized by its size and composition.

The objective of this chapter is to introduce the past and future development of labor force supply in Japan and Switzerland and to identify the most important challenges companies face on account of these developments.

This chapter is structured as follows. First, an outline is given of Switzerland's and Japan's past and future development of the population and demographic triggers. Second, the development of the working age population in both countries is discussed and compared. Third, the concept of labor supply and the development of participation in both countries are examined. Finally, based on the knowledge gained, the most important challenges facing companies are briefly outlined.

**Figure 2: Determinants of labor supply**



Source: Author's own design

<sup>4</sup>  $\Delta$ Population Size = Fertility – Mortality ± Migration

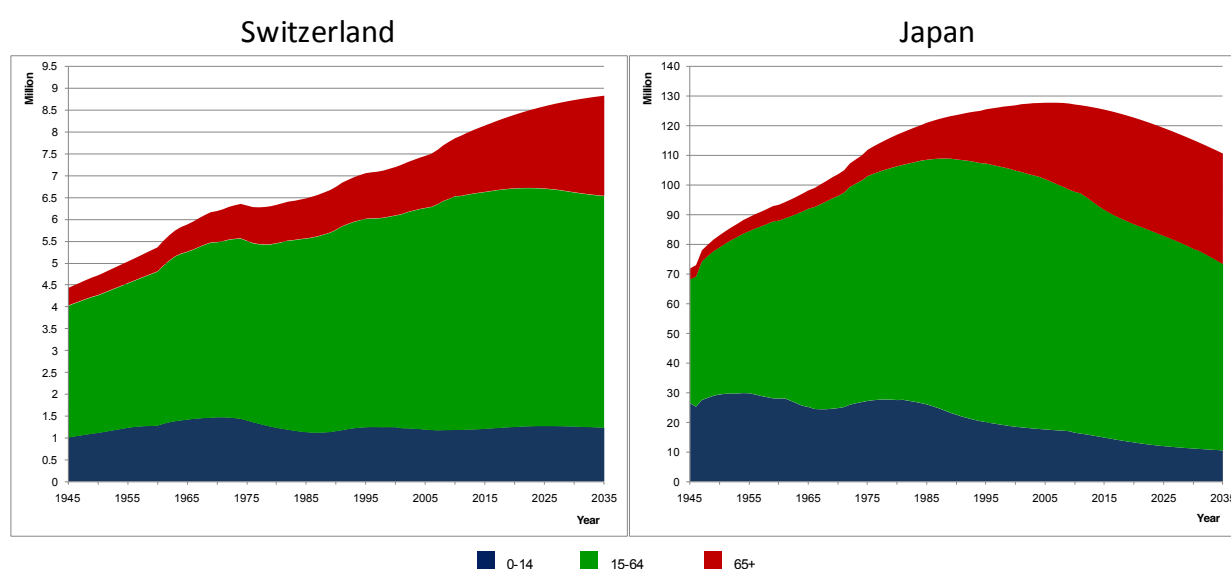
### 3.1 POPULATION

As depicted in Figure 2, the population is the starting element when analyzing labor supply. For this reason, a brief overview of past and the most probable future population developments in Switzerland and Japan are given. An analysis of the three demographic triggers will then reveal why the population changes in this way.

Since the beginning of the 20<sup>th</sup> century, the population in Switzerland has more than doubled from 3.3 million (1900) to 7.8 million (2010) (Swiss Federal Statistical Office [FSO], 2011). Population growth peaked between 1950 and 1970, with average annual growth rates of more than 1.4% (see Figure 3). Until 1980, the most important driver for this growth was the excess of birth over death. Since then, net migration has exceeded the excess of birth over death (except from 1995 to 1998) and was thus much more important in terms of population growth. As a result of the economic slowdown in 1975 and 1976, which caused a temporary net emigration, the country experienced a population decline (1976: -0.6%). Since then, the growth in population has regained strength. Between 2007 and 2009, annual growth rates exceeded 1% (FSO, 2011). For the future, the population is expected to continue to grow, albeit at a slower rate. Between 2010 and 2020, the population will grow by about 7%. In the next decade, growth will fall to 4%, before it is halved between 2030 and 2040. The population is expected to reach 8.9 million by 2040 (Swiss Federal Statistical Office (Bundesamt für Statistik) [BFS], 2010c).

Figure 3 shows that a completely different picture emerges for Japan. In 1926, Japan had 60 million inhabitants; 41 years later it had already surpassed the 100 million mark. From the 1980s, growth rates declined sharply but were still positive; in 2005, however, Japan's population shrank for the first time. The population is expected to continue to decline up to 2035 and to fall below the 111 million mark (Statistics Bureau, 2011a).

**Figure 3: Development of Switzerland's and Japan's population between 1945 and 2035**

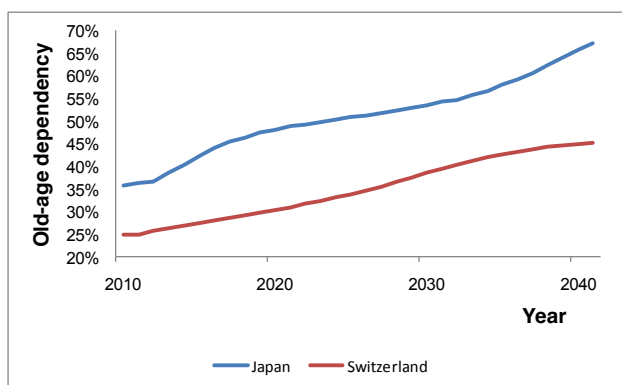


Source: Author's calculations based on BFS (2011a); BFS (2010b); Statistics Bureau (2011a)

Not only the size but also the age composition of the population has undergone considerable changes in both countries since the beginning of the 20<sup>th</sup> century. At the beginning of the century, Switzerland's population was relatively young – 31% of the population was under 15 and only 6% were over 64. Hence the 15-64 age group accounted for 63% of the population

(BFS, 2011a). The impact of the baby boomer is apparent from today's age distribution. It is no coincidence that the proportion of the working age population accounts for 68% of the total population, whereas the share of young people (under 15) decreased to 15% and that of old people (over 64) increased to 17% in 2010. The process of ageing will continue, and the median age will increase further from 41.7 in 2010 to 47.1 in 2047 (BFS, 2010c). Figure 3 summarizes the developments of the size and composition of the population between 1945 and 2035 for both countries. Japan, too, was a very young country at the beginning of the 20<sup>th</sup> century. By 1950, the proportion of under-15-year-olds was 35% and only 5% were over 65 years. Nowadays, it is one of the most rapidly ageing societies in the world. For example, the number of over-65-year-olds doubled within 19 years between 1988 and 2007. In 2009, this age group constituted almost a quarter of the total population (Kingston, 2010). When we look at the median age,<sup>5</sup> the shifting age composition is even more striking. In 1945, Japan was a relatively young country with a median age of 22.3 years, making it younger than the United States of America [USA], Western Europe, and China. Today, Japan has the highest median age (44.7 years) and will surpass the 50 years mark by 2025 (UN, 2011d). Scrutiny of developments in the old-age dependency ratio<sup>6</sup>, which is constantly increasing, reveals profound changes in the age structure of both countries. An increasing old-age dependency implies that each person in the working age population has to support an ever increasing number of older people (65+). In 2010, Japan's old-age dependency was already the world's highest, and is set to almost double by 2040. Although Switzerland's ratio is way below Japan's, it is expected to almost double by 2040. This implies that social security and pension systems will have to meet special challenges.<sup>7</sup> However, the age composition within the working age population is of much greater interest to companies (Bruch, Kunze, & Böhm, 2010).

**Figure 4: Development of the old-age dependency ratio (in %)**



Source: Own calculations based on BFS (2011a); BFS (2010c); Statistics Bureau (2011a)

<sup>5</sup> The median age of a population is the age at which half of the population is younger and half of it is older than this age (Golder, 2003).

<sup>6</sup> The old-age dependency ratio is the number of persons 65 years and over per one hundred persons of working age (15-64) (Golder, 2003).

<sup>7</sup> The concept of the old-age dependency ratio has been questioned by several authors in recent years. The main point of criticism is the calculation base. Sanderson and Scherbov (2010) argue that using indicators that assume fixed chronological ages do not account for progress in important factors such as the remaining life expectancy at a specific age. Measures such as the prospective old-age dependency ratio and the disability-adjusted dependency ratio represent viable alternatives that take developments in other important factors (than only age) into account. The discussion on which measures estimate the burden for social systems and people in the workforce most accurately will gain in importance in the future.

In summary, the population of both countries has grown over the last century. While Japan's population is already decreasing, Switzerland's population is expected to grow further. Although the median age of the Swiss population was almost 11 years higher than that in Japan by 1950, in 2010 it was 2.3 years lower (UN, 2011d). The following analysis of the demographic triggers reveals the causes of the demographic developments, uncovering the reasons for the different outcomes.

### 3.1.1 MORTALITY

The life expectancy in Switzerland has almost doubled to 80.1 years for men and 84.5 years for women since the beginning of the 19<sup>th</sup> century. Interestingly, the gap between male and female life expectancy has been closing since 1992 (BFS, 2011b). However, the early rapid rise has been decelerating since the early 1960s. The reason for this rapid rise and its subsequent deceleration is simple. Up to 1960, the infant mortality ratio declined massively. Since 1960, however, the rise in life expectancy can be traced back to lower mortality among older people due to new possibilities to treat cardiovascular diseases (BFS, 2010a). Since 1960, the life expectancy for men aged 65 has risen from 12.9 to 18.7 years. Over the same period, the life expectancy for women aged 65 rose from 15.1 to 22 years (BFS, 2010a). A similar picture can be found in Japan. However, life expectancy has risen there at a much higher speed than in Switzerland. By the end of 1964, when Japan joined the Organization for Economic Co-operation and Development [OECD], the average life expectancies at birth for both men and women were the lowest of all OECD member countries at that time. By 1970, Japan already had the highest life expectancy of these member states, and it continued to rise (Matsukura, Ogawa, & Clark, 2007). In 1982, Japanese women had the highest life expectancy of 228 countries, a position it has held to date (Forbes, 2010). A baby girl born in Japan in 2009 can expect to live for 86.4 years. Meanwhile, men can expect to live for 79.6 years. Moreover, life expectancy for Japanese women and men aged 65 increased substantially to 24 and 18.9 years, respectively (OECD, 2011b).

Both Japan and Switzerland have very comparable life expectancies that rank amongst the highest in the world. Although a high life expectancy is not identical to good health, it does serve as a very good proxy for health under ordinary circumstances (Eberstadt & Groth, 2007). In other words, people in both countries do not only live longer than before, but also live longer in better health than ever before. A measure that indicates this is the so-called health-adjusted life expectancy [HALE], published in 2004 by the World Health Organization [WHO] for the year 2002. Although the development of the life expectancy is hotly debated by experts, it can be assumed to increase further in both Switzerland and Japan. The pace at which it will increase, however, is another matter.

### 3.1.2 FERTILITY

After the Second World War and a short-lived baby boom (1947-1949), Japan was the first non-Western country to experience a decline in fertility, which occurred at an unprecedented speed. Between 1947 and 1957, Japan's TFR more than halved from 4.54 to 2.04. In subsequent years, the TFR stabilized and hovered around the replacement rate (Ogawa & Matsukura, 2005). With the oil shock in 1973, the TFR resumed its secular decline and dipped below 2 in 1975. The phrase "1.57 shock" was predominant in Japan in 1989 in response to the country's lowest recorded fertility rate in history. Although Japan has been on a mission to increase its fertility rate, it further declined before reaching a record low level of 1.26 in 2005 (Haub, 2010). In 2006, it slightly recovered and rose for the first time in six

years and continued to rise for three consecutive years to a level of 1.37, where it stagnated in 2009 (Statistics Bureau, 2010). The massive decline in the fertility rate is somewhat surprising, given that the number of children married women wish to have has been relatively constant at 2.2 over the past 30 years. However, this discrepancy may be explained by the fact that many women choose to delay marriage or not to marry at all, and that virtually all babies are still born in wedlock (Forbes, 2010; The Economist, 2011). The latest population projection (2006) issued by the National Institute of Population and Social Security Research [NIPSSR] estimates in its medium variant that the fertility rate will be around 1.25 by 2040 (Kaneko et al., 2008).

Switzerland experienced two major baby booms. The first, which occurred between 1943 and 1950, led to fertility rates of around 2.4 and above. The second was experienced at the beginning of the 1960s, peaking in 1964 (TFR 2.68) (Höpflinger, 2007). Between 1965 and 1978, the TFR dropped sharply to about 1.5. In subsequent years, the TFR fluctuated between 1.4 and 1.6, hitting a historic low of 1.38 in 2001, before recovering to 1.5 by 2009 (BFS, 2009; Füglistaler, 1994). For the future, it is assumed to remain stable at 1.5 (BFS, 2010a).

### 3.1.3 MIGRATION

Since the Second World War, Switzerland has mainly had positive net migration rates. However, emigration and immigration have fluctuated according to economic and labor market trends. After the Second World War, Switzerland expanded economically. At the same time, labor was scarce and immigration was used to compensate for it (Höpflinger, 2007). After a record net migration of 100,000 in 1960, however, the rate became negative in 1975, when there were 58,000 more emigrants than immigrants (BFS, 2010a). The reasons for this outflow up to 1979 can be found in the aftermath of the oil shock and the induced slowdown of the global economy. With the complete introduction of the free movement of persons within the EU-17 [European Union of 17 Member States] and the European Free Trade Association [EFTA] in 2007, the net migration rate almost doubled within one year (2006-2007) to 75,000. The number of foreigners resident in Switzerland hit the one million mark in 1965. High net migration rates, especially since 2007, have led to more than 1.7 million immigrants entering the country, accounting for 22% of the total population in 2009. This is one of the highest proportions of foreigners in Europe and also among OECD member states (FSO, 2011). Over the years, not only the number but also the qualifications and countries of origin of those immigrating into Switzerland have changed. During the 1960s and 1970s, most immigrants were poorly educated; the past decade, however, was dominated by highly educated immigrants, most of whom came from Germany (Avenir Suisse, 2006). Immigration into Switzerland is predominated by young adults (aged 20 to 39), leading to a certain degree of population rejuvenation and counteracting the trends of population ageing induced by the other two triggers (Avenir Suisse, 2006). For the future, net migration is expected to fall and stabilize at 22,300 by 2030 (BFS, 2010a). However, as history shows, it is very difficult to forecast migration due to its high volatility.

During the postwar period (1945-1951) the allied occupying forces imposed a strict control of migration into and out of Japan. After regaining its independency, the country continued its restrictive emigration policy to fuel its rapidly growing economy with a high labor force supply. Since 1990, following the revision of the immigration law, the number of registered foreign nationals residing in Japan has been rising constantly (Akaha, 2008). Both the absolute



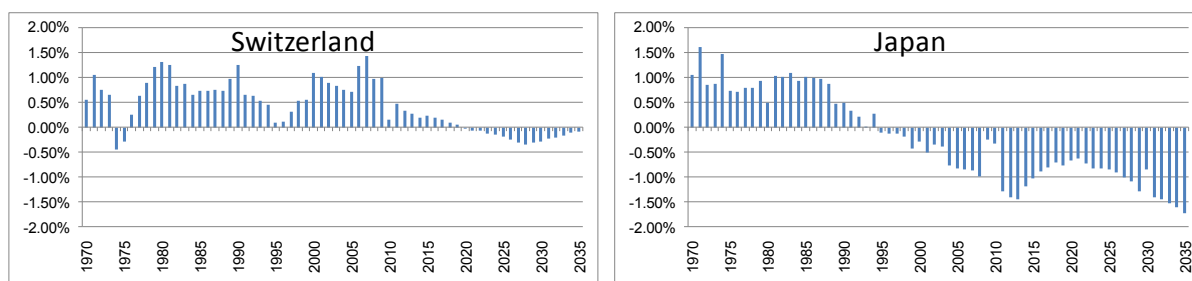
number and the relative proportion in the total population doubled from 0.87% to 1.74% between 1990 and 2007. In 2009, the number decreased slightly to 2.18 million, representing 1.71% of the total population (Vogt, 2008). Compared to Switzerland and other countries, these figures show that immigration has not been an important trigger for influencing demographic development in Japan.

The brief review of demographic triggers reveals that Japan and Switzerland underwent similar developments regarding fertility and longevity, whereas the international migration rates were substantially different in both countries. The existence of high net migration into Switzerland prevented the country from shrinking, and will do so for more years to come. Furthermore, the net migration of young adults has cushioned the effects of longevity and fertility decline by slowing down the ageing process in Switzerland. As net migration in Japan is almost absent (compared to the overall population), the country is experiencing the full reality of population ageing with an ageing, shrinking population.

### 3.2 WORKING AGE POPULATION

The working age population is a subgroup of the total population; consequently, demographic developments equally impact this group (as shown in Figure 3). It seems appropriate to use the age group of 15-64 as the working age population, because it is still mainly this group from which business leaders, innovators and the general workforce are sourced. However, it may be useful in the future to widen the age bracket further if it becomes common for people to work longer (e.g. until the age of 67) (Magnus, 2010).<sup>8</sup>

**Figure 5: Switzerland's and Japan's annual growth rate of the working age population (15-65 years)**



Source: Own calculations based on BFS (2011a); BFS (2010c); Statistics Bureau (2011a)

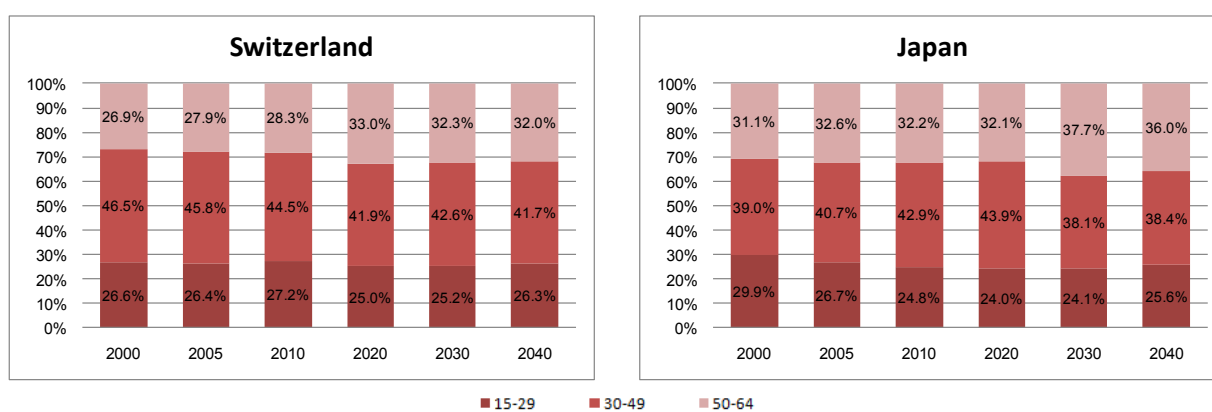
Figure 5 shows the annual change in the working age population (1970-2035). The net emigration following the oil shock induced negative growth rates in Switzerland for 1973 and 1974; this again highlights the importance of migration for the development of the working age population in Switzerland. Between today and 2020, positive growth rates are expected to lead to a working age population of above 5 million. From 2020 onwards, growth rates will be negative and, consequently, the working age population will decline before it stagnates at about 5.3 million (BFS, 2011a). For Japan the trends for this part of the population are different. Since 1995, Japan has been facing negative growth rates, leading to a 5% contraction of the working age population between 1994 and 2008 (OECD, 2011a). A trend reversal is not expected. The decline in the working age population is projected to be even steeper than that of the total population. While the total population is set to fall at a rate of around 0.5% a year up to 2035, the pool of the working age population is likely to contract at

<sup>8</sup> Adaptation of the age bracket demands that the lower end would be lifted too, due to later entrance into the workforce.

almost double that rate, around 0.9%. Not only is the absolute number of people in the working age population important for companies – the prevailing age composition of this population category is also relevant. This composition affects the labor supply due to fluctuating propensities across age cohorts to offer their workforce on the market.

The onset of the second half of the lives of baby boomer generations contributed remarkably to demographic shifts among the working age population in Switzerland. The proportion of working age population aged 50 years and over increased between 1996 and 2010 from 25% to 28.3%. According to the BFS (2010c), this share will increase further to about one third by 2020, representing an additional rise of about 5 percentage points. Figure 6 gives an impression of how the age composition of the working age population is changing in both countries (see Appendix 5 for more detailed information about age distribution). Similar to Switzerland, Japan's proportion of the working age population aged 50 to 64 has increased, and is projected to represent almost two fifths of the total workforce by 2040.<sup>9</sup>

**Figure 6: Age composition of the working age population**



Source: Author's calculations based on BFS (2011a); BFS (2010c); UN (2011d)

### 3.3 LABOR SUPPLY

The labor supply<sup>10</sup> should not be confused with the working age population. Whereas the latter simply depends on a defined age group, the former depends on the propensity of the 15+ population to participate in the labor market. Consequently, the labor supply is never equal to the working age population, which is a simplified measure with a number of inaccuracies. First, it does not give any weight to schooling beyond early high school and does not consider the possibility that some may choose to work beyond 65. Second, not everybody in the bandwidth defined by the working age population (15-64) is able or even willing to offer their manpower. For this reason, we will explore the age- and gender-specific developments of labor participation<sup>11</sup> rates in Japan and Switzerland.

If we examine the tables (see Appendix 6) containing the participation rates in Switzerland, several interesting observations can be made. While the total participation rate of women has increased, that of men has decreased over the last 30 years. Nevertheless, in

<sup>9</sup> One may assume that the share of 50-64-year-olds would be even higher for Japan. However, the UN applies an increasing fertility rate in its projection.

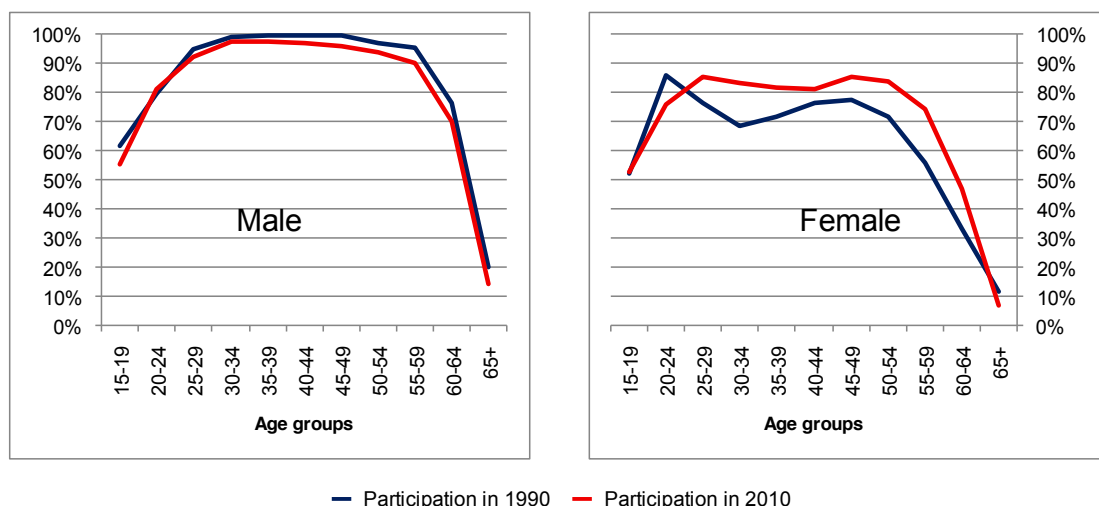
<sup>10</sup> The labor force is equal to the labor supply and is defined as the sum of persons employed and unemployed persons seeking for employment (UN, 2001).

<sup>11</sup> Interchangeable with activity rate and defined as labor force divided by reference population.

absolute numbers the labor supply increased for both genders between 2005 and 2010 (8.1% and 9.3% for men and women, respectively).<sup>12</sup>

Figure 7 depicts the lifecycle profiles of the male and female participation rates. These lifecycles are of special interest because they give an idea of people's propensity to offer their manpower when moving through the different age groups. This helps us estimate how the overall labor supply will change when the age composition of the total population changes and other age groups become more dominant.

**Figure 7: Participation lifecycle profiles in Switzerland**



Source: Author's graph based on OECD 2010

The male participation lifecycle has changed in shape only slightly since 1990. It still has its trapezoid shape, where participation increases until the 25-29 age group then flattens before it starts to decline from the age of 55 to 59. However, the participation rate has declined for males of all ages. The typical M-shaped<sup>13</sup> pattern of female labor force participation changed due to an increasing participation rate of prime-age women (the 25-54 age group). This increase caused the M-shape to flatten. The BFS (2010a) reports two reasons for an increasing participation of women during the last decade. First, it mentions the positive economic development that also led to a slight increase in male participation over the last decade. Nevertheless, the total male participation decreased between 1991 and 2010. Second, the fact that more and more women try to reconcile work and family life by taking part-time jobs may have played an ever greater role in the increase in the female participation rate. Employed women in Switzerland have a high propensity to work part-time (about 50%) compared to the OECD average (25%). The consequences can be seen in the full-time equivalent of women (see Appendix 9). Although women account for 45.2% of the total labor force, they provide only 36.7% of full-time equivalents (OECD, 2006).

A closer look at Japan's total participation rates shows similar developments to those in Switzerland (see Appendix 7). The total participation rate of males has been declining. By contrast, the total female participation rate had risen up to the early 1990s, after which it flattened. Compared to Switzerland and other industrialized countries, the labor participation

<sup>12</sup> This seems to be a contradiction. However, as long as the population in age groups with high participation rates grow faster than the decrease in the overall participation rates, the labor force increases further in absolute terms.

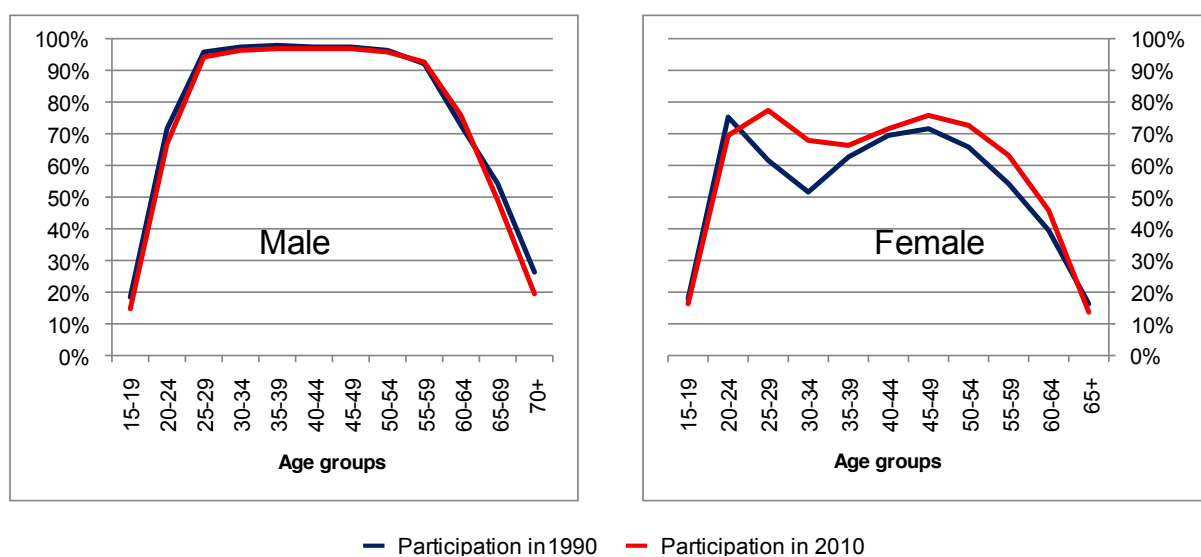
<sup>13</sup> The M-shaped participation lifecycle reflects the withdrawal of women at the time of child birth and their later return to the labor force.

rates of women were significantly lower whereas for men the respective rates were higher in Japan (Kawata & Naganuma, 2010). Absolute labor supply numbers in Japan show that the labor force peaked at 67.9 million in 1998. In the 6 years thereafter (until 2004), however, it declined, although the population was still growing at that time in Japan. The labor supply recovered and grew again between 2005 and 2007, before starting to shrink to 65.9 million by 2010. The 2010 labor force was therefore smaller than that in 1993. Declines in the age-specific labor force participation rate and changes in the age composition (namely demographic ageing) of the population implied that the labor force was growing at a slower rate than the population (Clark, Ogawa, Kondo, & Matsukura, 2010).

At first glance, the lifecycle trajectories in Japan (Figure 8) seem to be similar to those in Switzerland (Figure 7). The male participation lifecycle has a similar trapezoid shape and female participation discloses an M-shape lifecycle. Nevertheless, closer scrutiny of the lifecycles of both countries reveals a number of differences. On the one hand, both male and female participation among young people (15-24) is higher in Switzerland. On the other hand, it declines more rapidly for older people of both genders in Switzerland. This becomes particularly apparent when examining the participation of men and women aged 65+, for whom the rates are almost twice as high in Japan. As in Switzerland, in Japan the shape of female participation is M-shaped, yet the M is more marked than in Switzerland and participation along the total lifecycle is lower in Japan. Nevertheless, the shape has also experienced slight flattening over the past two decades, due to an increasing participation of prime-age women. Although the participation rate of prime-age women increased, it was still among the lowest in the OECD area. This circumstance can mainly be assigned to the women's withdrawal from the labor force when their first child is born (normally between the ages of 25 and 34). The fact should not be forgotten that most of the increase in the female participation rate was driven by a growing number of young non-regular workers, accounting for more than 90% in female employees in the 25-34 age group, (see Appendix 8) (OECD, 2011a).<sup>14</sup>

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<sup>14</sup> Many definitions describe the status of non-regular workers. The criteria for regular employment are "open-ended (contract)", "full-time" and "direct employment". The status of non-regular employment is given if one of these criteria or a combination thereof is not met (Asao, 2011).

**Figure 8: Participation lifecycle profiles in Japan**

Source: Author's graph based on Statistics Bureau (2011b)

As mentioned above, the concept of the working age population has some inherent inaccuracies. Nevertheless, it is still a good proxy for the labor supply. As we have seen, the working age population makes the greatest contribution (at least at present) to the labor supply in both countries. It is therefore still appropriate to emphasize that the faster this age group expands, the stronger the potential for economic growth and a rise in living standards, and vice versa (Magnus, 2010).

### 3.4 CHALLENGES FOR COMPANIES IN SWITZERLAND AND JAPAN

Chapter 3 revealed that both Japan and Switzerland are affected by demographic change. In both countries people live longer and more healthily, and have fewer children. The high influx of young immigrants into Switzerland has had a certain rejuvenation effect on the country, mitigating the consequences of a low fertility rate and a high life expectancy. Due to the quality and quantity of net immigration, Switzerland will be able to stabilize its working age population and delay the decline that is expected to set in by 2020. Nonetheless, the growth rates will be relatively low. By contrast, Japan, which has relied almost exclusively on natural population growth, feels the strain of demographic change more directly. The population has grown old and has already started to shrink, as has the workforce. This trend is not expected to be reversed; in fact, it is expected to gain in speed in the years ahead. As a result, companies in Japan will encounter an environment of a shrinking working age population and shrinking labor supply sooner than companies in Switzerland.

Considering all these developments in both countries, companies (especially their leaders) and policy makers will be faced with a set of challenges. First, a shrinking and ageing population will reduce the pool of highly skilled and well-educated employees.<sup>15</sup> This phenomenon has been uncovered in two ways.<sup>16</sup> Second, the average workforce age is

<sup>15</sup> In line with other research (e.g. in Bruch et al. (2010); EVD (2011)), this thesis assumes that the supply of skilled labor is declining in line with a decreasing and ageing labor supply.

<sup>16</sup> First, the author examined the development of the working age population. Second, he analyzed the participation rates of both countries. The lifecycles revealed that participation correlates with age groups, and that the highest participation rates are at the age of 25 to 54. This implies a strong impact on the overall labor supply when large cohorts move from age groups with high participation rates to those with lower rates. For this reason, not only absolute numbers of the working age population development are important but also its age composition and age group-specific propensity to offer its work on the market

increasing, which could make it harder for companies located in Switzerland and Japan to compete against companies in countries (such as India) that continue to provide a large pool of young workers. Third, the workforce will become more age-diverse in the future, meaning that several generations will have to work together in the same company. This circumstance could have both positive and negative effects on a company's performance. Complementary skill sets may stimulate each other, enabling different generations to enhance their productivity. On the other hand, generational clashes could paralyze a company, stalling performance and, hence, negatively affecting growth. Finally, there is an imminent risk to companies that the increase in retiring age cohorts will lead to a massive brain drain. Consequently, companies will be urged to install the right processes to secure precious tacit knowledge (Kunisch et al., 2011). The following explanations focus mainly on the first challenge mentioned and present strategies for business leaders and policy makers to secure growth in an environment of a shrinking (or at least stagnating) and ageing labor supply. Yet, the first challenge is inevitably interlinked with the others, meaning it is impossible to separate them totally.

#### 4 LEVERS FOR FUELING THE LABOR FORCE PIPELINE

The preceding chapters took a demographic perspective and presented statistical evidence that both countries, and consequently the companies located there, already face (Japan) or will face (Switzerland) a declining or stagnating labor supply.

A closer look at basic macroeconomics reveals the impact of such demographic developments. According to the Solow model, labor supply is one of the determinants of the output<sup>17</sup> (measured by the GDP) of an economy (Gärtner, 2006). A shrinking labor force<sup>18</sup> (*ceteris paribus*) will therefore negatively impact GDP growth and could even constitute the initiating impulse of a vicious circle. To prohibit this impending danger, policy makers and business leaders have to find efficient measures to compensate for the labor force shortage or to halt and to reverse it. For this reason, it is important to scrutinize the factors (including labor supply) that influence the development of GDP.

The objectives of this chapter are to present the major pillars that influence GDP growth, to deduce in a general manner (independent of any country-specific characteristics) the levers available to cope with the challenge of an impending labor force scarcity and to gain a basic understanding of factors that represent good starting points for a lever to be applied successfully.

Consequently, this chapter, which takes a more economic based view, is structured as follows. First, the major pillars influencing the GDP growth of any country are presented. Second, based on these pillars, the key levers for dealing with labor force shortages are introduced and critical issues related to their activation are discussed.

##### 4.1 MAJOR PILLARS INFLUENCING GDP GROWTH

There are, at least in the long term, three major pillars that influence or drive GDP growth: the growth of labor supply, technological progress, and the amount of capital per worker.

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<sup>17</sup> This chapter explores the economy's capacity to expand. Consequently, throughout the chapter whenever referring to output or income, the potential output or income is meant.

<sup>18</sup> The chapter assumes perfect conditions where the labor market is cleared and labor supply is equal to employment.

According to Magnus (2010) and Gärtner (2006), the amount of capital is often the most difficult of the three pillars to predict, and many economists tend to assume that it grows at a steady rate in line with overall economic growth.<sup>19</sup> This implies that the levers to cope with decreasing labor supply have to be deduced from the other two major pillars.

Technological progress always implies a more efficient use of inputs, meaning a greater output for a given input (in this case, labor and capital), hence it is the same as productivity gains. In Chapter 3 the main factors influencing labor supply were introduced, namely fertility, mortality, immigration and participation. It is virtually impossible to influence mortality and fertility rates (especially for business leaders). Consequently, they are not appropriate levers to be considered as short- to medium-term measures. Instead, immigration and participation should be scrutinized further. At least in advanced economies, the participation rate of older people and women still leaves room for improvement.

The four levers identified to cope with the impending shortage of labor supply are therefore: participation of older workers and women<sup>20</sup>, immigration and productivity.

## 4.2 PARTICIPATION OF OLDER WORKERS

Despite the increased life expectancy and the generally high health status of older workers, a trend towards early retirement is observable in developed countries. Given that in many countries the baby boomer generation will soon approach the age of early or regular retirement, the pool of older workers who are still potentially able to remain in the labor force will rapidly expand. Tapping this pool of workers by either encouraging them not to retire or by enticing them back into the labor force could certainly help ameliorate labor force shortages, benefiting individuals and society (Sanders & McCreedy, 2010). Tracing the early retirement trend back to its roots reveals many responsible determinants that have to be scrutinized and changed. Most of the determinants can be grouped as follows:

- *Legislation and regulation*: Those most often discussed in this group are the existent mandatory retirement<sup>21</sup> rules (Burkhauser & Rovba, 2009; Higo, 2006), the attractiveness and generosity of early retirement and social security benefits, extended unemployment benefits (Kyyrä & Wilke, 2007; Hairault, Sopraseuth, & Langot, 2010), and the lack of government incentives (tax, pension) for late retirement (Duval, 2003).
- *Managerial beliefs and rational arguments of employers*: In the managerial beliefs and rational arguments, a decline in productivity by older workers (Torres-Gil, 2009), increased health costs, a decline in workability and employability due to technological progress, and the seniority principle in position, responsibility and salary assignments are cited as the main reasons why employers are often reluctant to employ or recruit older workers (Higo, 2006; Jordan, 2006). Kunze (2010) refers to the contemporary literature, which shows that employers' practices, such as employee selection (internal and external), performance appraisals and company training decisions, are often a common source of age discrimination. A qualitative study by Loretto and White (2006) revealed that designing

<sup>19</sup> This simplification is appropriate for this thesis.

<sup>20</sup> It is pertinent that an economy should maximize the participation rate of all age and gender cohorts (see, for example, EVD (2011)). In selecting older workers and women, the thesis focuses on two often marginalized groups with a large number of well-educated non-workers or part-time staff.

<sup>21</sup> There are different definitions of the retirement age, which are not always used consistently. In this thesis, the term "legal mandatory retirement age" is used for retirement stipulated by law. The term "mandatory" denotes retirement defined by the company due to the expiry of the regular labor contract. "Statutory retirement" denotes the age at which persons become eligible for pension benefits.

practices to manage the aged workforce is not usually the long-term strategic focus of most companies in the United Kingdom.

- *Traditional, cultural and personal attitudes of older workers:* Older workers require greater flexibility of work time and the workplace, allowing them to achieve a suitable work/leisure balance (Czaja & Sharit, 2009). There is growing evidence in the literature of a discrimination of older workers based on false stereotypes (Kunze, 2010). Such discrimination might prevent older workers from participating in the workforce. Most often, employees cling desperately to the seniority principle, including a linearly increasing career over the lifecycle with respect to promotion and salary. This makes horizontal promotion difficult and the aged workforce expensive (Cappelli, 2009).

#### 4.3 PARTICIPATION OF WOMEN

Although the female participation rate increased markedly in most advanced economies in recent decades, there still remains a significant difference to male labor force participation in all countries. The picture is even more drastic when comparing the full-time equivalence of women and men (Montanari, 2009). In addition, the relevant data from the literature indicate a slowdown of the increase in female participation (Euwals, Knoef, & Vuuren, 2011; Fortin, 2009). Non-working females or part-time female workers therefore represent another pool of potential labor force that could be exploited to cope with labor force scarcity. The most popular determinants for lower participation rates of women can be grouped as follows:

- *Legislation and regulation:* A recent report by the World Bank (2010) lists gender discrimination with respect to legislation and regulation that determine the course of women's working lives in 128 economies. The report focuses on differences in accessing institutions (a lack of autonomy to interact with government), in using property (no ability to access and use property), in getting a job (restrictions on working hours, gender-differentiated mandatory retirement age, industry restrictions), in dealing with taxes, obtaining credit and going to court. The report clearly states that gender inequality is a global phenomenon. Genre, Salvador, and Lamo (2010) also state that the rigidity of labor market institutions (union density, employment protections, eligibility of unemployment benefits) has a negative impact on female participation in Europe. Based on the female participation rates of France, Germany and Sweden in the 20<sup>th</sup> century, Coulmas (2008) demonstrated that the labor market demand, and to a much greater extent, social policy (e.g. childcare subsidies, tax treatment of second earners), had a deep impact on the realization of different family models, such as the "male-breadwinner model" and the "dual earner model" in these countries during the development of their welfare states.
- *Workplace bias and workplace inflexibility:* Human resources managers claim that women's qualifications with respect to education and personal attributes are not assessed lower than those of men (Sabeen, 2007). However, the small number of women in top positions seems to speak another language. Mismatches between characteristics associated with good management<sup>22</sup> and persistent female stereotypes is often cited as one of the major reasons for gender bias and, consequently, the minimal proportion of women on boards and in top managements (Heilman, 2001). The low proportion of women in board rooms leads to male-dominated cultures with a lack of career models adapted to changing female needs that demand flexibility. The lack of flexibility that often

<sup>22</sup> These characteristics are predominantly based on male stereotypes (Heilman, 2001)



burdens women with the problems of reconciling the family and work, the inability to make an impact and the limited opportunities for career developments frustrate women and push them out of the workforce (McGrath, Driscoll, & Gross, 2005). These reasons are especially distinct for women re-entering the workforce after motherhood.<sup>23</sup> Besides these pushing forces, other forces also pull women out of the labor supply, as considered in the next paragraph.

- *Traditional, cultural and personal attitudes of women:* Fernández (2007) establishes a clear correlation between the cultural background and the hours worked when analyzing the labor participation of female immigrants in the USA. Women originating from countries with a culture of working women (high female labor force participation) have a much higher participation after emigrating to the USA, regardless of the level of education. The normative beliefs of “stay-at-home mothers” continue to be based on traditional notions, such as always being available for their children and putting their children’s needs before their own. Even in the “employed supermom” belief, maternal care giving is still central. Yet, the “employed supermom” tries to meet the social, emotional and physical needs of their children by working part-time, nightshifts and at home (McDonald, Bradley, & Guthrie, 2005). Traditionally, women are also more involved in giving care to elderly people in the family, a service that tends to occur during their prime-age. Depending on the intensity, elder care-giving negatively influences the women’s labor force participation due to their reduced hours of work or on account of stopping work altogether (Schulz & Martire, 2009). The paragraph above mentioned persistent stereotypes in the business world that often impede women who strive for a career, much to their frustration, pushing them out of the labor market. However, according to Babcock, Laschever, Gelfand, and Small (2003), the reason for unequal treatment is rooted in the fact that women are less likely to negotiate, due to their socialization at an early age of not focusing on their own needs but on those of others. Consequently, men who assert their needs are better at climbing the career ladder.

#### 4.4 IMMIGRATION

Unrestricted immigration would certainly be a preferred option of many businesses to cope with a shortage of skilled labor because it enables them to select skilled workers from a global pool. McDonald and Kippen (2001) state that, besides increasing productivity and increasing participation rates of native citizens, the immigration of skilled labor will be an indispensable determinant for the economic growth of developed countries with a declining fertility rate and, hence, a shrinking labor force. In fact, Hamilton and Whalley (1984, as cited in O'Rourke & Sinnott, 2006) suggest a substantial increase in world income by freeing up world migration.

In a model for an immigrant framework, Segal, Mayadas, and Elliott (2006) systematically discuss the factors that force an individual to enter an emigrant-immigrant process. Voluntary migrants (who do not migrate for religious, cultural or political reasons) are rational income optimizers. They move when the anticipated gains with respect to opportunities are sufficiently high. These gains are not only measured in economic achievements (wages,

<sup>23</sup> The transition back to work is often carried out gradually via part-time work. Working part-time is often reported to be very frustrating for well-qualified women because of the lack of opportunities to make a valued contribution or to be considered for meaningful and interesting assignments (McGrath et al., 2005). Consequently, women will seek full-time employment or leave the workforce.

taxes) by the migrant. Increased educational and social opportunities, immigration laws and policies, attitudes and prejudices, political climate, the presence of international connections may all be instrumental in spurring immigration.

The following discussions focus only on legislation and regulation, as well as on attitudes, prejudices and fears in the country of destination that might make it harder for companies to recruit any “skilled worker of choice” from any country in the world.

- *Legislation and regulation:* In all countries, the immigration of people is regulated and controlled by legislation and regulation. According to Bader (2005), affluent countries have a moral obligation to fairly open borders to efficiently win the fight against global poverty, insecurity and inequality.<sup>24</sup> The reality looks different. Opposition against free immigration is steadily increasing in developed countries. Governments concede more and more to voters demands to close the borders for unrestricted immigration (see, for instance, Ridell (2011) and Bolzen (2011)). O'Rourke and Sinnott (2006) document this trend by mentioning that in 2001, 21 out of 48<sup>25</sup> countries' governments had policies designed to reduce immigration while only two of them had policies designed to increase immigration. Political studies (Givens, 2004; Golder, 2003) reveal a close causality between the success of populist and extreme right parties and the number of immigrants or foreigners in the country, whereby this relation is even more pronounced in the event of high unemployment. Increased immigration is therefore expected to enforce this right-wing movement and to put pressure on governments to close borders.
- *Attitudes, prejudices and fears:* The anti-immigrant mindset can be attributed to economic reasons on one hand and sentimental, cultural, ethno-national and conformal attitudes on the other hand. Economic reasons are more or less based on rational arguments concerning social security. They are refutable by a prospering economy and a well-established welfare system. The other reasons emerge from collective, non-rationally constituted feelings concerning a loss of national integrity, ethnic amalgamation, etc. The individuals' economic reasons can be best documented by the fact that anti-immigrant opposition is dependent on the skill-set of immigrants and the native population. Highly skilled native citizens are less opposed to immigration than their low-skilled counterparts (O'Rourke & Sinnott, 2006).<sup>26</sup> Economic considerations may also be responsible for the finding that the anti-immigrant mindset is less common among younger than older generations, especially in countries where pension benefits are related to wages (O'Connell, 2011). Yet there is also support for these natives' individual economic fears from the economic literature. Immigrants generate demand for investment. It is likely that the demand for investment will, in fact, be relatively heavy in the first few years after immigration. It seems to be a reasonable assumption that they may add more to investment demand than to national savings in the short run, implying a net reduction in the supply of new investment for other purposes. Borjas (1994) finds for the US market

<sup>24</sup> Bader (2005) states that affluent countries' argumentation concerning special state obligations including public or social security, civil rights, democracy, welfare, solidarity and ethno-national culture protection serves them only to hide welfare-chauvinism.

<sup>25</sup> O'Rourke and Sinnott (2006) mention developed countries, but do not specify them further.

<sup>26</sup> O'Connell (2011) explains this finding by the fact that low-skilled native workers feel less economically secure in the light of the immigration of low-skilled workers, because they have knowledge and skills that can easily be acquired by anybody. Immigrants are therefore potential competitors to them for these jobs. Highly skilled workers have several reasons to feel more economically protected. First, they are highly specialized, and because skill levels grow exponentially with specialization, there are only a few other workers with the respective skills. Second, native guilds, associations, unions and national governments often apply measures to artificially protect the more specialized highly skilled workers. Finally, not all professional qualifications are automatically recognized in all countries (not even within the EU).

that immigrants will probably not reach parity with the earnings of natives during their work life and will participate earlier in welfare programs more intensively. He advocates an immigration policy that filters applicants in terms of observable skills because this will attract more skilled workers who will have higher earnings, are likely to make less use of public assistance programs and, finally, will positively foster the skills of the second generation.

For a long time, non-economic based attitudes against immigration had not been studied, discussed or even mentioned in the relevant literature. They are certainly very difficult to discuss without arousing embarrassment, censure or reproaches due to nationalism or even racism. Only recently, intense discussion and research has been initiated in social science, dealing with the question of the extent to which immigration undermines social cohesion based on attitudes such as trust and tolerance. A decline in indicators of social cohesion such as trust and tolerance in western democracies is evidenced by the literature. It is, however, still a matter of debate how strongly the immigration-based increase in diversity, especially ethnicity-based diversity, contributes to this decline. Uslaner (2010) argues that diversity is not the culprit in declining social cohesion. It is more residential segregation that leads to a decline in trust and solidarity, because it inhibits integration and social networking. He therefore advocates for policies that counteract such segregation. Holtug (2010) argues that inequality rather than diversity negatively impacts the indicators for social cohesion. For this reason, he advocates a policy that fosters access to the benefits of the welfare state for all groups of residents.

#### 4.5 PRODUCTIVITY

If the labor supply cannot be boosted sufficiently by increasing the participation of older workers and women or immigration, the alternative lies in a higher productivity growth. Increasing productivity would add to the contributions made by higher participation rates and immigration.

The most basic definition of productivity is that it represents a measure indicating the output per unit of input. Different kinds<sup>27</sup> of productivity<sup>28</sup> measures can be found in the literature, depending on how input is related to output.

The literature discusses the many factors involved in increasing productivity. Among the most prominent are improvements in technologies, the accommodation of intangible assets, an increase in labor quality through educational attainment, outsourcing, labor market flexibility, hours worked per employees, and the reallocation of both labor input and material (Gordon, 2003; Oliner, Sichel, & Stiroh, 2007). Analyzing productivity increase in the context of these factors is quite complex and often leads to controversial conclusions, especially when discussing the role of minor contributors.<sup>29</sup>

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<sup>27</sup> E.g.: Labor productivity relates output to the labor input; TFP and Multiple Factor Productivity [MFP] are often used interchangeably in the literature. Then the latter is often used to signal certain modesty with respect to the capacity of capturing all factors' contribution to the output (OECD, 2007).

<sup>28</sup> Unless otherwise mentioned, the author refers to productivity as the measure comparing output with total input.

<sup>29</sup> There is, for instance, a broad consensus in the literature that the heavy investment in ICT was the key driver for the productivity increase in the USA during the 1995-2000 period (for example, in Gordon (2003); Oliner et al. (2007); Brynjolfsson and Hitt (2003); Brynjolfsson, Hitt, Yang, Baily, and Hall (2002); Nordhaus (2002)). A controversy opens up between these researchers in explaining the increasing productivity despite decreasing ICT investments during the period following 2000. Brynjolfsson et al. (2002) find that the upsurge of productivity is caused by the accumulation of intangible capital to enable full exploitation of ICT investments. Gordon (2003) is skeptical about this interpretation. He believes that the rapid productivity growth after the trough of real GDP in 2001 is mainly a consequence of the end-of-expansion effect (EOE), often observed after such recessions. EOE reflects over-optimistic forecasts and over-hiring at the end of an expansion,

All researchers agree that productivity will increase over the decades to come. The projections are burdened, however, with a high degree of uncertainty (Jorgenson, 2008; Oliner et al., 2007; The conference Board, 2011). The question whether the productivity increase will be sufficient to compensate for the expected labor shortages is therefore difficult to answer. For example, Jorgenson (2008) projects a productivity growth of 0.5% and 2.9% per year in the worst and the best case, resulting in productivity growths over the next two decades of 11% and 77%, respectively. Depending on which projection is considered, different conclusions and recommendations would be the result.

#### 4.6 ROLE OF POLICY MAKERS AND BUSINESS LEADERS

The discussion above reveals the role of political, social, cultural, economic and technological factors for the activation of the levers identified to cope with labor force scarcity. These factors make up a company's environment, which needs to be constantly revised. Taking the environment into consideration when taking decisions about the application of levers helps business leaders and policy makers to understand which environmental factors could oppose or support a lever. Consequently, they have to understand which levers best suit a given environment. Environmental factors cannot be influenced directly by companies. However, policy makers have instruments at their disposal to influence at least some environmental factors. In the process, they must strike a balance between the often contradictory interests of all legitimate groups.

Faced with the challenge of a shrinking labor force, companies have to analyze internal corporate spheres with respect to factors that could help to activate the above-mentioned levers. Changes in such factors should have a pulling force on individuals to remain in the labor force and also to motivate them to pursue lifelong learning to maintain or even improve their workability. The most prominent spheres include corporate strategies, structures and cultures, as well as management processes that need to be scrutinized in view of creating a pulling force. For instance, companies have to analyze the flexibility of their working time, workplaces, compensation and career models to enable a smooth adaption to the special requirements of the pool of older workers, care givers, mothers and immigrants.

Finally, many of these levers are interrelated by positive or negative co-operative effects. Consequently, policy makers and business leaders should avoid activities within the given levers that lead to negative co-operative effects, and should invest in levers that initiate positive co-operative effects.

The extent to which the levers introduced above have already been activated in Japanese and Swiss companies and which levers still have potential will be discussed below. Based on information from interviews with managers and other experts, and on the country-specific literature, recommendations for tapping these potentials will be developed.

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causing a squeeze in profits, followed by cost cutting, layoffs, reluctance to hire workers in the recession and the first stages of recovery. Oliner et al. (2007), who analyzed productivity growth over a longer period (1995-2006), even state that the influence of intangible capital on productivity growth in this period is negligible. They conclude that productivity growth is still a consequence of ICT investments, albeit at a lower rate than before 2000 and to MFP growth outside the IT producing sector.

## 5 EXPLOITATION OF OLDER WORKERS' LABOR FORCE

Statistics for Switzerland and Japan project an increasing number and proportion of healthy older people in the future. Consequently, the pool of older people who could contribute to the labor supply is constantly growing.

The objective of this chapter is to evaluate the present exploitation and applicability of this lever in the two countries, as highlighted by the interviewees and the contemporary scientific literature.

The chapter is structured as follows. First, the interviews conducted with managers and other experts for Switzerland are analyzed, in addition to the literature. Second, the same procedure is repeated for Japan. Finally, a cross-country comparison is conducted.

### 5.1 STATUS IN SWITZERLAND

#### 5.1.1 PERSPECTIVES OF THE INTERVIEWEES

Interestingly, interviewees<sup>30</sup> associate completely different ages or age brackets with the term “old” or “aged”. For some, the status of “old” is assigned to people aged 40. Others associate the age bracket 45 to 55 or 58 to 62 with the term “old”. Interviewees addressing an age bracket beyond the statutory retirement age of women and men when speaking about older people who could be retained or re-employed are very scarce.

Interviews with managers paint a quite heterogeneous picture regarding the actions taken by companies to retain older people within the labor force. Some companies have already introduced opportunities to prolong the work life beyond the mandatory retirement age. This is mainly the case for companies with a mandatory retirement age below the statutory age. However, this is often only carried out in special cases or on request. The opportunities provided include flexible work time models, alternative compensation schemes and pension plans. A model allowing for a slow phasing out was mentioned during which the workload is successively reduced by sharing it with a younger colleague. To make these models especially effective, they are often combined with mentoring programs. These programs allow for a smooth transition and for the transfer of critical tacit knowledge to the succeeding employee, thereby avoiding the phenomenon of brain drain. The older employees concerned often step back from their responsibility as line managers and assume positions as senior advisors, consultants or project leaders. An interesting approach envisaged is the creation of a pool of consultants. The pool would consist of former employees with many years of experience in the company and the industry in question who could be engaged for certain projects. Other managers openly confess that activities to retain or re-employ older employees are still in their infancy or even non-existent, but that the topic will appear on the agenda soon. A third minor group of managers states that there is greater interest in promoting younger employees to certain positions in their company than in retaining older employees for these positions. Most of the interviewees recognize the advantages of this lever in Switzerland, given the current development in the population's age structure and the trend of an increasing life expectancy combined with good health. Additionally, the reported willingness to at least work until statutory retirement age is relatively high among workers who are given interesting assignments and the possibility of greater flexibility.

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<sup>30</sup> For detailed information about the differences between interviewees, managers and experts, please refer to Section 1.2.

All of the interviewees doubted the success of tapping into this pool. Many pointed to the average retirement age in Switzerland, which is already high, and that major efforts would be required to activate this pool, especially given the wealth of older people in Switzerland. It seems to be a difficult, if not impossible, task to re-employ older people who have already retired. Once retirement is prepared, people start to rearrange their lives and plans, which they will be unwilling to renounce. It is therefore important to keep them employed and somehow connected to the company. The willingness of aged workers to remain is crucial if a link is to be sustained. Yet this willingness is often jeopardized by minor forms of discrimination with respect to vocational education, performance assessment, and career planning or being given a fair chance of obtaining new, interesting jobs. Such discrimination gives older workers a feeling of being left on the shelf. However, a lack of opportunities for vocational training is demand- and supply-driven. On the supply side, a culture is still prevalent in many companies that questions the return on investment of vocational training for people above a certain age threshold. On the demand side, older employees are often reluctant when it comes to further training. They often question the usefulness of such additional skills. Yet this reluctance may be infused by social norms and beliefs.

The interviewees' concerns are similar when it comes to the seniority principle. The principle is still widely applied, making the aged labor force expensive and, consequently, less attractive and hampering horizontal career planning. A switch to a more performance-based principle may bring relief, although its acceptance is highly questioned. Reduced performance, reduced flexibility for change and the technology gap between the old and the young are often cited as prejudices still prevailing in many companies. These prejudices, combined with the ease of managing the recruitment and immigration of foreign workers, are emphasized by experts to oppose the development of this lever.

### 5.1.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The high labor participation rate of older men and women in Switzerland and the close coincidence of statutory and effective retirement are also accentuated in the literature as outstanding features of the Swiss labor market when compared to the surrounding European and OECD countries (Ferro-Luzzi & Sonnet, 2003). Dorn and Sousa-Poza (2003) and Bütler (2009) trace high participation mainly to an advantageous pension and security system. The Swiss pension system consists of an earnings-related state scheme, a mandatory occupational pension scheme, and an income-tested supplementary benefit (OECD, 2011d).<sup>31</sup> Early retirement is penalized by a pension reduction of 6.5% per year within the state scheme. In occupational schemes, the reduction is 0.2 percentage points per year. Both state and occupational pensions can be deferred. Pensions are increased in the same way as they are reduced in the event of early retirement. It is also possible to claim a state pension at 65 while still working. In this case, however, contributions are not levied on people working after 65 if earnings are below CHF 16,800. If earnings exceed this threshold, contributions are levied but no additional pension entitlement can be earned.

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<sup>31</sup> The state pension is based on average lifetime earnings with a minimal pension of CHF 13,260 and a maximum pension of twice that amount. The mandatory occupational system is built around "defined credits" to an individual's pension account that is fueled partly by the employer and partly by the employee. The system has a minimum annuity rate of 7.05% for men aged 65 and 7.1% for women aged 64. The system results in a full career replacement rate of 32.25%. From 2005 on, the annuity rate has been dropping to 6.8% over a ten-year period (OECD, 2011d).

Dorn and Sousa-Poza (2003) critically appraise any measures that would change this system in the direction of higher flexibility to make early retirement more attractive. In contrast, they identify a deficiency of incentives to work beyond the statutory retirement age. A few new regulations concerning early and late retirement have been introduced recently, but time alone will tell the extent to which they will change the effective retirement age. Bütler (2009) identifies regulations that could jeopardize the high participation level of aged workers in Switzerland. General subsistence guarantees encourage low-income workers to retire early and to claim for supplementary benefits. In addition, high replacement rates induce many elder workers with high accumulated pension wealth to prefer leisure to labor. Thus, there is still room for improvement in the pension system to make later retirement more attractive. Policy simulation performed by Duval (2003) regarding the effect of pension reforms indicates a remaining potential to increase the labor force participation of older workers by adjusting the Swiss pension scheme. Between 4.2 and 8.4 percentage points could be gained by improving the actuarial fairness of the system and by increasing the statutory retirement age. Men and women are not eliminated from the labor force on account of a legal mandatory retirement age. Nevertheless, most labor contracts end at an age that coincides with the statutory retirement ages, and most workers leave the labor force at this age at the latest. Employers seem to show little interest in retaining older workers to avoid major brain drain. The reluctance may be based more on financial considerations. The compensation system in most Swiss companies is still strongly based on the seniority principle, making the manpower offered by an older candidate quite expensive. In turn, employees have little motivation to apply for new positions or new jobs, or to start up their own enterprise by making use of their accumulated experiences and skills. Certainly, this can be explained in part by the old workers' wealth, as discussed by Bütler (2009).

In line with the interviewees' responses, the literature also mentions stereotype-based attitudes concerning performance and adaptability to learning and change leading to the discrimination of aged workers. The two examples mentioned here do not claim completeness, but aim only to illuminate the situation in Switzerland. Kluge (2006) investigated attitudes to older workers concerning their performance and efficiency in learning in two Swiss firms. Clearly, the findings cannot be generalized for all companies, but the responses show that only marginal negative attitudes to older people are present. In general, older co-workers are not rated as less efficient workers or learners. There is, however, a tendency for teams consisting mainly of younger members to judge older co-workers more negatively in this respect than teams containing older members. In addition, older workers feel more discriminated against than younger workers. Krings, Sczesny, and Kluge (2011) also studied the role of stereotypes for employment discrimination against older candidates among Swiss students and professionals. The study presents convincing evidence of an age bias in hiring based on the stereotype of reduced competency with age. The stereotype dominates hiring even if job requirements do not primarily concern competence.<sup>32</sup> Krings et al. (2011) assess such stereotypes as false, but clearly verify their persistent influence on age discrimination in the hiring process.<sup>33</sup>

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<sup>32</sup> For instance, students and professionals consider older workers to be less competent but warmer. Nevertheless, they would prefer to hire younger people, even if the job primarily requires warmth-related and not competence-related qualities (Krings et al., 2011).

<sup>33</sup> The competency-related stereotype is not specific to Switzerland and is not the only relevant stereotype that leads to age discrimination. Johnson (2009) gives a comprehensive overview of managers' attitudes and stereotypes.

The “Schweizerischer Arbeitgeberverband” (Swiss Employers' Association) seems to be aware of the under-exploitation of older people in the labor force. However, the association recognizes the difficulties older workers face when looking for a job and the differences in competence levels, which change with respect to age. In a brochure, the association recommends offering older employees more individualized retirement solutions and more flexible employment models (Schweizerischer Arbeitgeberverband, 2006). Ferro-Luzzi and Sonnet (2003) recommend measures that foster the employability of employees. They see potential for improvement with respect to older workers' accessibility to vocational education, with respect to a qualitative increase in labor conditions in order to improve the health of individual employees and with respect to discriminating recruitment practices (see also EVD (2011)).

## 5.2 STATUS IN JAPAN

### 5.2.1 PERSPECTIVES OF THE INTERVIEWEES

Companies in Japan tend to have relatively low employee turnover rates. Consequently, employees build up a network and tight bonds to their co-workers over their years of intense work. Precious knowledge, many years of experience and elaborate networks make older workers very productive and therefore an interesting case for companies. Interviewees report that many companies already apply this lever. However, the main constraint to application – the seniority principle – calls for appropriate solutions. The obvious difficulties induced by this principle are often circumvented by not directly retaining older employees in their position but rather retiring them and re-employing them with a new contract. Older workers reaching retirement age (often 60) who are still interesting to the company receive an offer for a new contract. Such contracts are then often limited to one year with lower wage schemes but an extension option. These contracts not only reduce the costs induced by the seniority principle, but also allow companies to recruit young talented workers while retaining the older workers' knowledge and to respond quite rapidly to a labor force excess. Besides offering new contracts, Japanese companies have developed a number of strategies and models to retain older employees within the workforce. The most prominent ones mentioned by the interviewees are the following:

- *Shift to affiliates*: Older workers shift to affiliated companies which are often also small suppliers. For many of these affiliates, this seems to be their only *raison d'être*, i.e. to absorb older workers from the main company and to further employ them. Japan has a unique system of interrelated companies that allows a shift of people from bigger to smaller companies.
- *Self-employment*: Many older workers start their own businesses as suppliers of their former employer, which is often also the business' only (or at least important) customer.
- *Consulting*: In a preferred model, the company offers older workers a consulting or advisory position within the company. It is a model that very well suits the Japanese culture of honoring older workers. Furthermore, it allows older workers to pass on their experience and knowledge to their successors without subordinating the more experienced employer to the successor.

The models presented show that companies are more eager to retain their older staff than to actively try to recruit older former employees of other companies. According to the respondents' opinions, it is commonly believed that older workers from other companies, who are influenced by its culture, may disturb and destroy the new company's existing culture.



This reluctance opens the door for foreign companies to enter the Japanese labor market and to exploit this pool of very experienced workers who are willing to join foreign companies as long as the payment is better than that granted by Japanese companies. Some emerging countries that border onto Japan, such as China, have realized the value of this knowledge and attempt to lure older Japanese workers into their country to benefit from knowledge transfer.

The interviewees repeatedly stressed the apparent contradiction between a high life expectancy (especially combined with good health) and the relatively low level of statutory retirement (60 years in 2000). Since 2001, the statutory retirement age has steadily increased, reaching 65 in 2013. It is assumed that the main purpose of the paradigm shift (regarding retirement age) was not the lack of well-trained and skilled workers, but rather the problems faced by the financial burdens expected for the social security and welfare system induced by an increasing proportion of older people. Increasing the statutory retirement age boosted the already high participation rate of older people even further. However, another explanation for these high rates can be found in the very meager pensions, forcing people to work longer in order to make a living.

Beside this regulation-driven contribution to labor force, the interviewees mention several reasons rooted in the Japanese culture and mentality as important. Experienced employees are highly esteemed and conferred with titles confirming their age, experience and the value attributed to them. Tight bonds with their co-workers makes the workers themselves want to remain in the company. In addition to these work-related factors, Confucianism, which still plays an important role in the life of many Japanese citizens, has a supportive effect and pushes people into the workforce by teaching them to remain active.

For the interviewees, the main threat to retaining people is still rooted in the existing seniority principle that defines wages and promotions of employees and that is, in part, a consequence of the above-mentioned adoration of older workers. Older and more conservative employees tend to insist on the status quo, and will therefore be unwilling to accept lower wages or to work under a younger colleague (or even a woman). Adherence to the seniority system combined with the deeply rooted belief that careers can only experience a linear upward shift (with respect to wages and position) makes the employment of older people very expensive, rendering active career planning almost impossible at a higher age.

### 5.2.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

Many of the interviewees' statements can be found in the literature. They are often only touched upon by the interviewees, and will be presented in more detail via the relevant literature.

Japan is one of the few countries with an effective retirement age above the statutory retirement age (Casey, 2005). About 30% of men aged 65+ are still working, despite already having reached retirement age. The participation rate of men aged 60-64 is around 76%. It seems important to emphasize that this holds true only for older men and not for women. The participation of women aged 60-64 is only 45%, and is clearly superseded by the participation rates of the USA, Sweden and Switzerland. Yet the following discussion concentrates primarily on male participation rates, and will deliver a rationale for the low female participation rate at the end of the paragraph. Yamada (2010) traces the high participation rate of men back to three major factors:

- social security system (public pension benefits and early retirement benefits);
- wide range of possible retirement practices;
- flexible wage adjustment for older people.

Japan's social security system consists of two tiers (OECD, 2011d): a basic, flat-rate scheme and an earnings-related plan, the so-called employee's pension scheme.<sup>34</sup> Early retirement is penalized with a 0.5% reduction of the benefit per month (6% per year). In the event of late retirement, it is possible to defer the basic and earnings-related pension. This increases the pension benefit by 0.7% per month (8.4% per year). Since 2006, it has been possible to combine working and receiving a pension after the age of 65. The result of a policy simulation by Duval (2003) predicts a possible gain of 4.7-9.3 percentage points in the labor force participation of older people aged 55-64 by improving the actuarial fairness of the pension system and by raising the statutory retirement age.

Mandatory retirement ages in Japan are formally defined by companies, and not by law, and generally coincide with the termination of the contract in the case of regular employees. Yamada (2010) reports that 96% of companies have measures in place to continue employment. Companies with retirement ages below 65 are obliged by law to ensure the employment of workers until they become eligible to receive public benefits. Oka and Kimura (2003) emphasize that retirement of Japanese male workers is a gradual process. Termination of the tacit contract of lifetime employment does not implicate that workers withdraw from the labor force.<sup>35</sup> In most cases, re-employments engender a substantial wage reduction (Casey, 2005; Oka & Kimura, 2003; Yamada, 2010). The average wage reduction is estimated to be around 30% for those re-employed in the same company, but can be up to 50% for those who change employer. Such wage drops can be compensated by employees through the aforementioned ability to combine work and pension receipts. Yamada (2010) studied the relationship between wage profiles, the discretion of employers to significantly reduce wages for post-retirement age workers and the high labor force participation of older workers. He finds that the relative wage difference between young and older workers is a decisive factor when hiring staff. Companies with flatter age-wage profiles show greater disposition for extending retirement. Given the steep age-wage profile in many Japanese companies, older workers can only compete successfully for jobs by reducing their wages.

Yamada (2010) and Casey (2005) also reveal a close relationship between the high employment rate of aged workers and the low overall unemployment. Casey (2005) shows that the increase in the overall unemployment rate from about 3.2% in 1997 to about 5% in 2002 translated directly into an increase in the unemployment rate of workers aged 55-64.

The special importance of work ethic mentioned by the interviewees is also highlighted by Casey (2005) and Oka and Kimura (2003), who emphasize that this factor cannot be neglected in the discussion. Older people in Japan want to work more than their counterparts

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<sup>34</sup> The basic pension requires 45 years of contributions for full benefit; pensions earned from this scheme are paid from the age of 65. Full basic pension corresponds to 15.8% of average earning. The employee's pension scheme has accrual rate of 0.5481% (OECD, 2011d).

<sup>35</sup> There are many different re-employment models: some workers are re-employed by the same company, some are hired by a subsidiary firm, some search for new jobs themselves and some become self-employed. Re-employment is often on a temporary basis, and usually involves a change in terms of conditions. About 55% of the companies with a retirement age below 65 offer such re-employment, but only about a quarter of applicants are re-employed (Casey, 2005). Shukko and Tenseki are different practices by which employees are transferred to other firms (Casey, 2005; Oka and Kimura, 2003). In the case of Shukko, the employee remains employed by the sending firm, whereas in the case of Tenseki, the contract with the sending company is terminated and he is re-employed by the receiving company. If there are no re-employment opportunities, the firms help departing employees to establish themselves in self-employment with a lump-sum retirement payment (Casey, 2005).

in most other countries, and retirement seems to have a profound effect on the psychological well-being of older men (Casey, 2005). According to Oka and Kimura (2003), surveys suggest that “the majority of men want to continue work until 65 or over in order to keep their health and *ikigai*” (purpose and meaning of life). Because the corporation plays an important role in providing the employee with a source of social networking, an identity and a purpose in life, Higo (2006) identifies severe dilemmas in installing measures to increase the labor force participation of older workers. Re-employment practices and wage reductions, as described above, dismantle old employment institutions and may discourage older workers, who still associate quality of work life with life-long, full-time integration into corporate work and seniority principle-driven careers and compensation. According to Higo (2006), the government is faced with a corporate culture derived dilemma in fostering flexible work time and work places by practices such as teleworking and telecommuting. Higo (2006) cites a survey performed by the Japan Telework Association showing that Japanese teleworkers miss communications at work or feel increasingly isolated. Higo (2006) also mentions that employers are reluctant to switch to telework as a possible practice because most employees and managers in Japan still prefer face-to-face communication and still value group and collective efforts more highly than individual initiatives.

What has not been touched upon by the interviewees is the special situation of old women in Japan and their contribution to the labor force. The participation rate of older women is much lower than that of older men. Older Japanese women could therefore constitute a much larger pool to tap in order to mitigate the labor force shortage in Japan.<sup>36</sup> As a potential reason for this low participation of older women, Higo (2006) mentions the social expectation of Japanese women’s role as the care giver, which assigns women the main responsibility for caring for society’s elderly, including parents and in-laws. In this respect, Higo (2006) refers to a survey performed by the cabinet office of the government of Japan. In the survey, non-participating men and women aged 60+ were asked their reasons for not participating in the labor market. 43% of the responding women, but only 5% of the responding men, stated the “poor health of the family and caring for parents” as the reason. Higo (2006) mentions that the family model with parents still living together with their children is much more common in Japan than in other industrialized countries.

### 5.3 CROSS-COUNTRY COMPARATIVE REFLECTIONS ON OLDER WORKERS’ PARTICIPATION

The interviews and the literature studied revealed many similarities for both countries, as well as distinct differences representing possible sources of recommendations.

Compared to other OECD countries, both Japan and Switzerland have an outstanding participation rate of older people. The restrictive pension systems that discourage people to take early retirement are probably highly supportive. Both countries have projected a small potential to increase labor force participation by increasing the statutory retirement age and improving actuarial fairness. The seniority principle and companies’ reluctance to retain the workability and employability of older workers are additional factors impeding an even higher participation rate in both countries.

Despite these similarities, only Japan has managed to reach an average retirement age for men beyond the statutory retirement age. Switzerland’s average retirement age for men

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<sup>36</sup> To make this possible, however, women need to be employed and trained in the early phases of their lives.

remains slightly below the statutory one, which may indicate the reduced willingness of Swiss employees to work after reaching the statutory retirement age. The factors extracted from the interviews and literature to explain the greater willingness of Japanese employees to work longer can be classified into soft and hard factors.

Soft factors are linked to cultural attitudes of Japanese society and the corporate culture of Japanese companies. Willingness to work and commitment to the company is an indispensable element of self-confidence and the sense of life for Japanese people. Older employees are highly esteemed and are conferred with titles confirming their age, experience and the value attributed to them. In contrast, Swiss workers are less committed and more interested in optimizing their work/leisure balance. It is therefore much more difficult to retain workers via such soft factors.

Hard factors are the models offered by Japanese companies to older employees to prolong their working lives. Interviews have revealed that a few companies in Switzerland have started to work in this direction, and recommendations can certainly be deduced from Japan's experience and preliminary Swiss findings. It could well be the case that unsuccessful models in the Japanese environment (for instance telecommuting, flextime) may be more successful in Switzerland because they suit the western perception of the work/life balance.

A significant difference between the two countries is the low participation rate of Japanese women compared to women in Switzerland. The reasons for these differences must be sought in gender- and not age-specific characteristics. Consequently, factors leading to a lower participation of women in Japan will be discussed in more detail in Chapter 6.

The interviews and literature from the two countries revealed key areas, each comprising several key topics that require consideration when attempting to raise the participation of older people in the workforce. These topics are summarized below. Common and country-specific recommendations will be deduced from them in Chapter 9.

**Table 1: Key areas and topics regarding the participation of older workers**

<b>Key areas</b>	<b>Key topics</b>
Legislation and regulation	<ul style="list-style-type: none"> <li>Increased statutory retirement age</li> <li>Actuarial fairness of pension system</li> <li>Compatibility of employment and eligibility for pension payments</li> <li>A pension system that does not support early retirement; incentives for late retirement</li> </ul>
Attitudes and stereotypes	<ul style="list-style-type: none"> <li>Appropriate workplace and work time model to suit older workers' preferences and abilities</li> <li>False stereotypes about older workers' flexibility, competence and willingness to learn</li> <li>Discriminatory practices</li> <li>Intergenerational acceptance and information flow</li> <li>Employees' commitment to the company, motivation to work, employability</li> <li>Esteem of older workers</li> <li>The seniority principle</li> </ul>

Source: Author's design

## 6 EXPLOITATION OF THE FEMALE LABOR FORCE

Examining women's participation lifecycle reveals a similar picture for Japan and Switzerland. Switzerland, however, has managed to flatten the often observed M-shape of women's participation lifecycle. Nonetheless, women's participation rates lag behind men's in both countries, and therefore room for improvement can statistically be identified.

The objective of this chapter is to illuminate the present exploitation and applicability of this lever in the two countries based on the interviewees' responses and the contemporary scientific literature.

The chapter features the same structure as Chapter 5.

### 6.1 STATUS IN SWITZERLAND

#### 6.1.1 PERSPECTIVES OF THE INTERVIEWEES

The interviewees are fully aware that the participation rate of women in Switzerland has room for improvement. Increasing the female participation rate is a lever appreciated by company representatives and other interview partners. It is not only appreciated for its potential in coping with an impending labor force scarcity, but also for its inherent potential to promote diversity in companies and to build a new culture, creating a breeding ground for innovation. Despite this broad acceptance, only one of the managers interviewed mentioned a defined female participation rate target; only three have already implemented concrete actions to increase participation. None of the others have specific programs or are in the phase of planning or implementation. The programs already implemented are relatively diverse, and include measures to reconcile the family and work, to plan maternity leave, to plan reintegration, to attract women and to boost their careers.

Different instruments are already available to reconcile the family and work. Some companies have installed the possibility of working flexible hours and offer childcare services. However, part-time and flexible working solutions still constitute a special agreement, often only available for a restricted group of women. Managers stress the increasing importance of taking the father's role into account when instruments for families are developed. However, these instruments for fathers are only just emerging or are not even in place.

One manager reported a planning phase to organize the handover process following the announcement of a pregnancy. This instrument provides the company with a lead time before a woman leaves her job, leading to a smooth transition. In addition, the woman's availability during her leave and the potential time of her return can be clarified.

Managers emphasize the importance of programs to reintegrate women after maternity leave. Reintegration already starts when women leave the company. Keeping them attached via some sort of information exchange makes reintegration at a later stage much easier for both the company and the women concerned. For the actual reintegration phase, most managers propose some kind of training or internship to teach women the latest knowledge in their respective area.

Several of the companies interviewed have started to train women for top positions, an action that has two important effects. On the one hand, it boosts their careers and on the other it demonstrates the company's readiness to consider women for key positions and to support the recruitment of ambitious and highly skilled women. However, the interviews

clearly reflected the negative attitudes of companies towards the legal enforcement of quotas.

According to all those interviewed, the role assigned to women, as the main person responsible for child-rearing, is still of major importance when identifying the causes of moderate participation rates. In certain rural areas of Switzerland, the “cruel mother” image of women leaving their children alone or in the custody of non-family members is still a frequently expressed prejudice. Irrespective of such attitudes, most of the interviewees deplore the insufficient childcare opportunities in Switzerland and a school system that fails to support double earner families. Although some of the companies mention the implementation of company-owned daycare facilities, opinions diverge as to whether private or public institutions should be responsible for the payment and improvement of such services. Some favor public childcare facilities to private corporate-based services, whereas others do not.

Regardless of the availability of such daycare facilities, the role of the mother deters many women from taking a full-time job. Women with one or more children tend to prefer part-time jobs. Nearly all managers express the incompatibility of careers with part-time employment or job sharing. The companies simply do not have a culture of accepting the combination of part-time work and managerial top positions, nor the instruments to realize it. Key positions have to be filled by full-time employees and those willing to put in even more hours. It is claimed that job sharing produces too much frictional loss during the handover process and that unpleasant tasks may be shifted from one job sharer to the other without resolving them.

Many interviewees consider the individual attitudes of women to be an obstacle to accepting a job. Women have an inherent aversion to certain sectors. It is especially difficult to fill vacancies in high-tech or financial sectors with women. Experience shows, however, that, once engaged in these branches, women often perform better than men and are able to climb the career ladder even more rapidly than them. In addition, the interviewees claimed that women are less likely to actively ask for or accept promotion if they are not fully convinced that they will be able to meet such a challenge. According to the interviewees, this can often lead to misunderstandings between women and their male subordinates who misinterpret a women’s decision as inconclusiveness or uncertainty.

#### 6.1.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

In line with the interviews conducted, the literature also recognizes the women’s role as mother as being crucially relevant to understanding the lower participation rate. The participation rates of men and women in Switzerland are identical before the transition to parenthood, and they remain identical in childless couples. Low participation rates can therefore not primarily be traced back to gender issues. Predominantly, the transition to parenthood, or rather the transition to motherhood, influences the participation of women due to them leaving work altogether, temporarily, or working part-time. Men’s trajectories showing a similar reaction to the transition to parenthood are scarce (see also Section 3.3) (Stähli, Le Goff, Levy, & Widmer, 2009). Obviously, most Swiss women still voluntarily accept or involuntarily play the role of childcare giver, assuming most of the responsibility for their well-being and education. Sousa-Poza, Schmid, and Widmer (2001) found that the imbalance in hours of unpaid work (e.g. household or childcare) per week is still significant between men and women, and depends on the household structure, particularly on the number of children in different age brackets. Based on empirical tests, Stähli et al. (2009) show that structural

factors associated with role conflicts (such as women's occupations, personalized childcare, the number and age of children and the parental role model) are the main factors that determine the behavior of women after the transition to motherhood. Lifestyle preferences have little impact on women's labor force participation, but can explain the source of their frustration if the factual situation does not match their wishes. Based on their research, Stähli et al. (2009) are convinced that work-centered lifestyles of women are still associated with feelings of career restrictions and sacrifices, whereas women with adaptive lifestyles seldom find a satisfying work/family balance. They state that the Swiss institutional framework is not very family friendly because of the inadequate public childcare, primary school schedules and taxes that penalize double incomes.

Losa and Origoni (2005) investigate the impacts of socio-cultural factors on female labor force participation in Switzerland. They find significant interregional differences in the way in which women determine their labor market behavior over their life cycle. For instance, female participation is markedly lower in the Italian-speaking region where the family model is strongly rooted in the tradition of women as homemakers.

The report prepared by the Federal Office for Gender Equality [FOGE] for the 44<sup>th</sup> session of the committee for the Convention on the Elimination of all forms of Discrimination Against Women [CEDAW] shows that Switzerland has considerably improved with respect to gender equality since ratifying the CEDAW, but still has deficits with respect to equality in the world of work (2008).<sup>37</sup>

Increasing pressure has been put on Switzerland by the international organization (OECD, committee of CEDAW) due to persistent inequality. In fact, an ongoing debate was initiated among policy makers and economic leaders concerning affirmative action programs. Krings, Tschan, and Bettex (2007) studied the awareness of and attitudes against such programs among a Swiss sample (162 employees, 46% women) of different companies in the French-speaking part of the country. The awareness of such programs is only fragmentary among the respondents. Attitudes become increasingly positive for programs that enhance the opportunities of women (e.g. childcare) and more negative toward programs enhancing preferential selection or positive discrimination (e.g. quotas for certain positions).<sup>38</sup>

Nonetheless, Bascha Mika published a booklet presenting a totally different and provocative view of the problem (Stitzler, 2011). She is convinced that the low participation rate of women in the workforce is no longer a problem of discrimination by men and a lack of rights. She blames her fellow females for being too cowardly to be able or willing to shake off the role of housewife by requesting their male partners to take on an equal share of the household chores, enabling them to make work and family compatible (Stitzler, 2011).

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<sup>37</sup> Infringements of CEDAW include a higher ratio of unemployment, a higher ratio of part-time work, unequal wages for equal work and the lower participation of women in executive positions. Part of this non-equality (part-time employment, low rate of women in executive positions) can be ascribed to the fact that women in Switzerland are still obliged to assume the main responsibility for the housework and childcare.

<sup>38</sup> These attitudes are probably also responsible for the fact that activities fostering childcare facilities are well accepted and have also been regulated by legislation since 2003 (Bundesgesetz über Finanzhilfen für familienergänzende Kinderbetreuung, 2002). The implementation of quotas for women in executive positions is opposed not only by employees but also among employers (Kühni, 2011). Women will be supported more sustainably by non-discriminatory hiring/promotion policies and a changed culture, for instance, by allowing for more part-time jobs in executive positions (Kühni, 2011).

## 6.2 STATUS IN JAPAN

### 6.2.1 PERSPECTIVES OF THE INTERVIEWEES

The interviewees emphasized that although they represent about half of the population, the proportion of women employed by companies is still relatively low compared to other countries. The situation becomes even more striking when the quality of the jobs they perform is scrutinized. Women are seldom found on the board of directors or in other high positions. Female graduates still do not have the same opportunities as their male counterparts on the job market and, once hired by a company, their career prospects differ to those of men. Many interviewees accentuate the fact that highly educated women with university degrees are forced to scrape a living working as secretaries.

Experts argue that the often well educated and neglected women in the Japanese labor force are an attractive target for foreign companies. Women are increasingly starting to realize that they have greater opportunities to climb the career ladder within foreign companies. Considering the difficulties faced by foreign companies to acquire male graduates from top universities and given the better language skills of women, this pool constitutes a very interesting case. Male graduates are more eager to strive for jobs in a ministry or a large Japanese company, based on Japanese culture. Who you are is still defined first by your family background, second by the university you attended and, finally, by the company you work for.

Interviewees fail to mention diverse measures taken by companies in Japan to somehow change the prevailing situation. Although measures such as childcare do exist in some companies, they are still relatively scarce. One expert refers to the situation at the end of the 1980s when the economy was booming and the labor market had started to dry up. In view of this impending danger, which could have hampered growth, companies started setting up special educational programs for women. Once the economic environment had cooled down and the bubble had burst, the programs were immediately abolished. Experts assume that companies with a female-dominated customer base may have a greater interest in employing women and may therefore have special programs. However, none of the interviewees expressed any detailed information in this regard.

The experts in particular believe that factors unfavorable for women may be at the heart of the problem of low female participation rates. Gender discrimination is a frequently mentioned phenomenon. The motives leading to discrimination are diverse and partly rooted in the corporate culture and society at large. Japan experienced the same phenomenon in the 1950s as Europe. During the process of industrialization in post-war Japan, men earned enough to make a living for their family; there was no financial pressure on women to go to work. The breadwinner model became predominant at that time, shaping the minds of generations and engraving itself upon Japanese society today. The corporate culture in Japanese companies is still often tailored towards stereotypical male rituals, such as going out and partying after work. These rituals play an important role as door openers for careers and interesting projects. It may be very frustrating for women to realize that male co-workers can push their careers at a much higher speed and receive more interesting projects. This may be a reason why many highly educated women leave the job market.

Maternity leave, child rearing and elderly care does not improve women's situations, but rather puts an additional burden on their shoulders, minimizing their chances of having a successful career in many companies. As a result, the reconciliation of family and work life is



an unresolved problem. Many interviewees refer to childcare services as still being relatively scarce, especially in areas with a high population density, such as Tokyo. This makes the available services relatively expensive and puts a high “tax” burden on the woman’s salary. It is often a trade-off, and women need to calculate whether their salaries are high enough to pay for childcare and whether it makes sense to work for the sake of paying childcare rather than spending time with their offspring. This unfortunate situation often forces women to have to decide between a career and the family. Even if enough childcare services were available, many other factors would still prevent mothers from actively participating in the workforce:

- *Social expectations*: The traditional and deeply engraved understanding of the role of men and women in society make it very difficult for women to pursue a career. Women who place their children in childcare are still not widely accepted and are often branded as bad mothers who neglect their duties. A changing mindset in society would also demand the willingness of men to share the responsibility of childrearing.
- *Re-employment opportunities*: Women returning to work after childrearing or maternity leave are often given low-level jobs. Although these women are highly educated, they often are not assigned to interesting projects.
- *Male-dominated working environment*: Not only are male-driven rituals (mentioned above) difficult for women to participate in, they also make the reconciliation of work and family life virtually impossible. Men who wish to be assigned to interesting projects or who strive for a career need to participate in these rituals, making them useless for family life and child-rearing (due to their long working hours).
- *Unpredictability of working hours*: Working hours are still relatively long and unpredictable in companies located in Japan. This makes it almost impossible for women to reconcile their work time with, for example, the opening hours for childcare services.

To improve the situation for women and to retain them in the workforce, the interviewees are convinced that monetary incentives alone will not suffice. There must also be a change in attitudes of companies and, especially, of the top management towards women and careers. Changes in the society’s mindset and changes in corporate culture will be the most important enablers when striving for equal treatment and the acceptance of measures allowing women to actively reconcile work and family. With an increasing old-age dependency ratio (see Section 3.1) the reconciliation will become even more difficult, requiring the intervention of policy makers.

As long as women do not feel appreciated for their work and until equal opportunities exist, it will be hard to keep them in the workforce. In a culture where hierarchy is still very important, it would be of utmost importance to send the right signals from the top ranks of the company and to promote the idea of gender equality. This would also mean having women in the company management, which could then usher in a culture that allows women to have the equal opportunities or, at least, better opportunities.

The experts recommend that companies make greater use of the relatively unexploited potential of women not only to increase the number of people available in the labor supply but also to foster diversity and, consequently, innovation.

## 6.2.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The literature, too, mainly assigns the problems of Japanese women’s integration into the labor force to the role they have to fulfill within a housewife-centered family model. In addition to this external perception, the women’s own traditional perceptions of a successful life

course, with a main focus on becoming a mother and full-time housewife, adds to the difficulties (Haghirian, 2009).<sup>39</sup>

In contrast to the interviewees' depictions, the literature presents a more diversified picture of the development of the Japanese family model. What is usually seen as a timeless, ever-existent, traditional and Japan-specific family system is something that has developed only over the 20<sup>th</sup> century, slowly replacing the patriarchal system of the late 19<sup>th</sup> century (Garon, 2010).<sup>40</sup>

Sasaki (2002) also unearths the positive impacts of Japanese family tradition. The traditional co-residence with parents and in-laws allows married women to share the housework burden, which has a significantly positive effect on their labor force participation. Kumagai and Kato (2007) support this finding and uncover an obligation perceived by women to stay at home when the youngest child is in the age bracket of 0-10. According to Tauzin (2010) and Haghirian (2009), the gender role is still predominant and one of the major reasons for women's low participation. Reflecting the interviewees' opinions, the authors point to the long working hours in Japanese companies, the unique pressure placed on business people and the many after-work obligations combined with low family allowances and insufficient nurseries as the main drawbacks to reconcile the family and work (Tauzin, 2010).

Demographic and social trends are already challenging the families', especially the women's, role in managing the society (Garon, 2010). Garon (2010) observes a gradual return to work by middle-aged women and an increasing number of younger women who do not intend to quit work after marriage who opt for long-term careers. He is convinced that this is an ongoing trend that will again change the Japanese family model.

The changing attitude of young Japanese women is proven by the differing results of studies exploring the same phenomenon in 2001 and 2011 (Hirao, 2001; Raymo & Lim, 2011). In 2001, Hirao (2001) concluded that university graduates at an early development stage are more likely to leave work. Raymo and Lim (2011) found that female university graduates are more likely to remain in the labor force compared to women with a high school leaving certificate or less. Yet they have a relatively low propensity to re-enter the labor market.

This raises the question of whether affirmative action programs should be introduced in Japan. The Equal Employment Opportunity Law [EEOL], enacted in 1985, makes discrimination in hiring and promotion illegal. The law, combined with the ratification of the CEDAW, have expanded women's employment significantly (Shinohara, 2008; Weathers, 2006). However, a recent study on married and single women's employment behavior reveals that the female employment rate in regular full-time jobs was identical for post-EEOL and pre-EEOL cohorts (Abe, 2011). Weathers (2006) reports that non-regular workers are

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<sup>39</sup> These challenges are reflected in the women's M-shaped labor force participation lifecycle (see Section 3.3), which shows the propensity of prime-age women to stop working and raise their offspring.

<sup>40</sup> Women were propelled to the center of the family for the first time during the Second World War when men became mobilized as workers or soldiers. This position was then further solidified after the war by three major driving forces: first, by the Civil Code in 1948, which eliminated patriarchs' and husbands' special authorities. Second, by the economic recovery in post-war Japan, which provided husbands with well-paid, steady jobs, keeping them away from family life. Finally, by the extraordinary reliance of the state on interfamily aid in order to obviate an expensive welfare state. Garon (2010) states that "the housewife has been the anchor of what Japanese scholars term the post war enterprise society". It was only because women accepted nearly full responsibility for all family matters (parenting, childcare, elderly care, etc.) that their husbands were enabled to work longer, harder and more productively, pushing the fast economic growth. Within Garon's (2010) argumentation, the state has little interest in changing this cult of domesticity because housewives disburden the state from cost-intensive care for elders and children and support it with unpaid services in governmental programs and campaigns.

still usually female. The status is associated with lower payments for equal work, a lack of or reduced rights to social security benefits and a lack of fringe benefits, such as bonuses and retirement pay. Japanese firms are still prone to recruit male employees because their expected work life within a company tends to be longer than that of their female counterparts (Fujimoto, 2010). Although the enacted law for childcare leave does not allow the dismissal or penalization of leave-takers, it is widely believed that women who take leave frequently face “disadvantageous treatments” (Weathers, 2006).<sup>41</sup> Weathers (2006) complains that the Law to Promote Support for Nurturing the Next Generation is only hesitantly implemented in companies. It mandates companies with more than 300 employees to enact action plans containing concrete measures for childcare. Yet non-compliance is not punished. Although large companies show willingness to comply, only about 1400 of the more than 4.7 million small and medium-sized enterprises [SME] submitted action plans. According to Weathers (2006), Haghirian (2009), and Fujimoto (2010), Japanese women are also discriminated by the double track system. The system divides new hires into two groups when entering a firm. Companies applying the double track system (mainly large companies) mainly reserve the managerial track for men. Women are most often hired for the administrative track that keeps them in a support role and often represents a dead end for their career. This monopolization of managerial positions by men is reflected in the very low number (~9%) of female managers (Weathers, 2006). Haghirian (2009) confirms the interviewees’ statements when mentioning the increasing propensity of ambitious Japanese women to work for foreign companies in Japan. In addition to better career opportunities, women working in western companies have also a better chance to reconcile family life and work, because working conditions are most often based on companies’ home country labor laws and practices.

Several authors also accuse tax exemptions for women that earn less than 1.3 million yen and the release of payments for pensions to be responsible for the low female participation rate (Tauzin, 2010; Weathers, 2006).

### 6.3 CROSS-COUNTRY COMPARATIVE REFLECTIONS ON FEMALE PARTICIPATION

At first glance, Japan and Switzerland appear to be quite similar when comparing the labor force participation of women, which is significantly below that of men in both countries. However, the difference between male and female participation is even more emphasized in Japan (see Section 3.3). Both countries adopted a single breadwinner model, implemented and cultivated mainly during the 20<sup>th</sup> century, albeit for different reasons. The model assigns to women the role of the housewife, who is responsible for doing the housework, caring for the children and, if necessary, for ill or elderly relatives. In both countries, access to facilities enabling an improved work/family balance is scarce. Women who remain in this role due to the presence of children or ill relatives have little chance to apply for a full-time job and climb the career ladder. For many, it is simply impossible to satisfactorily combine work and family life.

However, there is subtle difference that is worth mentioning. In Japan, the family model seems to be engraved in stone and deeply internalized as other traditions. Changing the

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<sup>41</sup> Many women who take childcare leave experience resentment among their co-workers who have to perform the extra work during their leave (Weathers, 2006). Although the law allows childcare leave for men and women, virtually no working fathers take paternity leave, and the majority of mothers still quit work upon childbirth (Shinohara, 2008).

model means disturbing part of the culture. The Japanese government is ambivalent with respect to change because the current model helps to exempt the welfare state from high costs for social security and care giving. The state shows a certain reluctance to fully implement national laws and international recommendations eliminating this discrimination of women. Moreover, legislation such as tax exemptions and dispensation from premium payment for married women encourage women to stay at home or to work part-time. Even if the problem of the role assignment to women were changed, it would still be the case that the corporate culture in Japan is not prepared to integrate female employees and to promote them efficiently up the career ladder. Business affairs in Japan are still the domain of men, and the corporate culture is adapted to male behavior. Even today, if a woman is not engaged in any family work she will be given virtually no chance to start a career in a Japanese company. Ambitious women have to fall back on foreign firms in Japan, which have recognized the high value of this pool.

Switzerland seems to be in a transition state, i.e. the first steps have been taken. The breadwinner model has already been softened, due to paradigm shifts in society and the economy. The state and many companies have clearly signaled their willingness to change, and preliminary steps have already been taken. The government receives fewer exhortations from international organizations monitoring the implementation of anti-discriminatory measures. A program was implemented and financial support given to increase the number of day care facilities. More and more women occupy key positions. The Swiss Federal Council, for instance, contains a majority of female members for the first time. Signs of change are positive, but a lot remains to be done. Many of the interviewed managers have not yet implemented any special programs to support female participation.

Recommendations have to be deduced from these subtle differences between the two countries, which started with a similar family model and situation, but are now drifting apart with respect to opportunities given to women for participating in the labor force. The interviews and the literature focus on three key areas that are vital for improvements within this lever.

**Table 2: Key areas and topics regarding the participation of women**

Key areas	Key topics
Legislation and regulation	<ul style="list-style-type: none"> <li>Pushing previously introduced claims of laws</li> <li>Affirmative and supportive actions</li> <li>Inexpensive care giving facilities</li> <li>Tax exemptions</li> <li>Pension regulations</li> </ul>
Companies' disposition	<ul style="list-style-type: none"> <li>Male-dominated working environment</li> <li>Working conditions that meet women's needs</li> <li>Discriminatory practices in recruitment</li> <li>Leave and integration plans for maternity leave</li> </ul>
Attitudes and stereotypes	<ul style="list-style-type: none"> <li>Stereotypes of women as the caregiver</li> <li>Stereotype of men's role in society</li> </ul>

Source: Author's design

## 7 EXPLOITATION OF THE IMMIGRATION LEVER

When it comes to immigration, the two countries have very different histories (as described in Section 3.1.3). While Switzerland has welcomed a high net migration, the rate in Japan has remained at a relatively low level.

The objective of this chapter is to analyze and compare the importance and application of the lever immigration in both countries.

The chapter features the same structure as in Chapters 5 and 6.

### 7.1 STATUS IN SWITZERLAND

#### 7.1.1 PERSPECTIVES OF THE INTERVIEWEES

The interviews reflect a broad consensus between experts and managers concerning the importance of the immigration lever for the Swiss economy and for coping with the impending labor force scarcity.

Managers of all interviewed companies assert that the immigration of skilled workers is practiced to a high extent in the recruitment process because the home labor market simply does not provide sufficient amounts of skilled workers. They are convinced that this lever remains one of the most important levers, and that companies would encounter severe problems if recruitment were narrowed down to the Swiss labor market. In general, the intra-company acceptance of such immigration is reported to be high because most medium- and large-sized companies in Switzerland are already multicultural and have cultivated the necessary cultural mindset among their employees and the management. However, international recruitment is difficult for companies focusing on the domestic market and areas where Swiss peculiarities play an important role.<sup>42</sup> Immigration not only involves giving teams sufficient labor force, but implementing diversity within teams, fostering innovation. Temporary immigration (expatriates) to headquarters is seen as an important instrument to enforce global networking among affiliates and the global dissemination of knowledge. Interestingly, none of the managers complained about the existing restrictions by legislation and regulation for non-EU/EFTA countries.

The interviewees believe that Switzerland is relatively open to immigration. The long-standing immigration history created an immigration culture that enables the country to cope with the high percentage of immigrants. The current volume of immigration is seen as a necessity because the Swiss education system simply does not have the capacity to produce enough skilled workers to satisfy the demands of the local economy. Some experts claim that the intense application of this lever has mitigated the effects of the ageing population and that, consequently, the strain is not felt by Swiss companies. However, another expert relativizes Switzerland's openness with regard to non-EU/EFTA countries. He complains about the difficulties in increasing quotas for immigrants from non-EU/EFTA countries and the limited possibility to exploit the existing immigrants because of their canton-wise allocation. A country-wise allocation or the possibility to exchange quotas between cantons

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<sup>42</sup> For instance, within the "Schweizerische Bundesbahnen" the multilingualism of the country is an important aspect in the daily business and this multilingualism is not, as in other internationally active Swiss companies, substituted by an English-speaking culture. Another example of companies with similar problems are those deeply engaged in services for private households and small SMEs; their skilled field service and sales forces are often only accepted if they come from the local area (e.g. if they speak the same dialect). Problems may also arise if a company's product relies heavily on "Swissness" or "Swiss quality" but the face shown to customers does not originate from Switzerland.

could make the EU/EFTA restriction more tolerable, given that many cantons do not exhaust their quotas.

Both managers and experts are convinced that the easy manageability and high success rate of the lever immigration is closely connected to the attractiveness of the country and the companies based there. The attractiveness of a business location is not measured in absolute terms, but is rather a question of comparative attractiveness. Immigrants trade off their opportunities in the country and company of origin against those in the destination country and company. At the moment, this trade-off seems to be in favor of Switzerland and the companies located there. Nevertheless, this favorable result is not a given, and could easily change.

Managers believe the attractiveness of Swiss companies is due to the attractive jobs available there and the high wages. The interviewees point out that Switzerland is internationally recognized as a country that has low taxes, as well as well-developed education, social security and health care systems. The open primary education system allows expatriates to send their children to international schools, making a potential relocation easier. They also highlight the importance of non-existing or low cultural barriers, especially between Switzerland and its much larger neighbors. Long borders with these neighboring countries (Germany, France, Italy and Austria) make the participation of foreign workers in the Swiss labor market even more attractive.<sup>43</sup> The pool of foreign students attracted by the internationally well recognized and affordable university system is an additional pool for the skilled labor force. The likelihood that many of these graduates are seeking jobs in Switzerland confirms the attractiveness of the country for employees and may, in addition, enhance the attractiveness of Switzerland as a business location.

The managers did not touch extensively on the acceptance problem of immigration within the Swiss population. Only two addressed a growing but still hidden resistance within the company (staff sometimes suggest employing skilled Swiss workers) and the population, which will increase pressure on policy makers. One manager identified the problem of the immigration of skilled workers being confused with the immigration of asylum-seekers. The manager claims that the latter are often difficult to integrate into the labor market and that they become dependent on the welfare state.

In the interviews, the experts express many more objections towards immigration than managers. Many of them question the sustainability of immigration to cope with the problems of an ageing population. The perceived attractiveness of Switzerland compared to other countries may change, causing the flow of immigrants to run dry.

The experts identify an increasing resistance among the Swiss population towards immigration. Such negative attitudes and feelings against immigration and open borders are no longer concentrated on poorly skilled people, nationalists and extreme right party members. The “new” immigration affects a highly skilled middle class, able to express their objections and to put pressure on policy makers. The experts argue that the acceptance of immigration will certainly decline as soon as the economy starts declining, and that resistance to immigration could be weakened by temporary or circular immigration. One of the main problems with this solution is alienation, which makes it more difficult for the immigrant to return to the country of origin. Today’s transportation and communication

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<sup>43</sup> Cultural barriers to areas close to the border are even more subtle, and skilled cross-border workers do not contribute to the ratio of foreigners in the total population.

facilities make this problem less severe compared to decades ago, when Switzerland's immigration policy relied heavily on such circular workers. The experts in particular argue that the easy manageability of immigration and, therefore, the heavy reliance on this lever by companies could impede the implementation of activities to reinforce other levers.

### 7.1.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The importance of immigration to Switzerland in coping with the scarcity of skilled workers is similarly assessed in the literature. Switzerland is portrayed as a country with a long-standing tradition of immigration. In fact, many of today's prospering and globally operating Swiss firms (Roche, Swatch, Nestlé, etc.) were founded by former immigrants who have therefore contributed significantly to the present high standard of living (Straubhaar & Werner, 2003). In their framework for immigration, Segal et al. (2006) mention factors<sup>44</sup> that influence immigrants' decisions to move. An assessment of Switzerland with regard to these factors shows how well positioned the country is and that it continues to attract skilled workers.

Although the Swiss immigration policy and legislation is a constant source of intense political debate, Straubhaar and Werner (2003) praise it for being transparent and continuous. Lavenex (2004) believes that a paradigm shift in the Swiss immigration policy, mainly through Europeanization, has increased the country's attractiveness to immigrants. This paradigm shift includes the abolishment of the *saisonnier* status, leading to the gradual expansion of foreigners' rights, less stringent naturalization laws and the free movement rights of EU/EFTA citizens.

Skenderovic (2007) considers two dimensions when assessing the ease of entering and settling in Switzerland: the relatively liberal immigration policy and the conservative, restrictive and exclusionary integration policy.<sup>45</sup>

Skenderovic (2007) describes the Swiss immigration policy as being driven by economic interests and cultural protectionism. He accuses policy makers of creating immigration policy that is more concerned with labor market demands than with integrating immigrants. The constantly high rate of foreigners in Switzerland is a result of this policy, which does not envisage the political and social integration of immigrants. Lavenex (2004) describes the Swiss approach towards immigration as an attempt to mediate between two social pressures: economic demand on the one hand and xenophobic sentiments on the other. Both researchers are convinced that the political instrumentalization of immigration laid the foundations for the development of extreme right movements and their continued acceptance by voters. Officials of employer's and employee's organizations are in no doubt that Switzerland will also need immigrants in the future to fuel the economy with skilled workers (Cassidy, 2011; Daum & Löpfe, 2011; Schweizerische Depesch Agentur [SDA], 2011;

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<sup>44</sup> These factors include high wages, especially the salary amount disposable to the household, and society-specific factors such as the standard of living, the availability of medicinal care and the social security system.

<sup>45</sup> The Swiss immigration policy is based primarily on two pieces of legislation. First, the Swiss-EU Bilateral Agreement on the Free Movement of Persons regulates immigration for persons from EU/EFTA states. It allows citizens from these states to settle in Switzerland without restriction if they possess a valid working contract in Switzerland. This agreement has been operative since 2002 for the then 15 EU and EFTA states; in 2005 it was also implemented for the 8 new Eastern European countries, albeit with some temporary restrictions. Second, non-EU/EFTA citizens require a special visa for immigration, whereby the type of visa depends on the country of origin, the purpose of immigration, the duration of residency, etc. Visas for non-EU/EFTA citizens are linked to the skill set of the visa applicant and to the urgency of the economic demand for this skill set. Working residents in Switzerland have access to social welfare and social security, such as unemployment benefits and the public pension system, but are deprived of access to political participation. Since the surrounding EU/EFTA states face the same demographic problems, it must be questioned whether these restrictive annual quotas for non-EU/EFTA states can be maintained when the surrounding labor pools start to dry out.

Tischhauser, 2011; Zulauf, 2011). There is, however, a growing skepticism against ever increasing immigration rates, even within the more moderate political parties (Furrer, 2011; Loser, 2011; Mensch, 2011; Rafi, 2011; Tischhauser & Rafi, 2011). The question of how much immigration can be digested by the country without jeopardizing social and political harmony is certainly one that has to be considered seriously when stressing the immigration lever even more emphatically to cope with labor force shortages.

## 7.2 STATUS IN JAPAN

### 7.2.1 PERSPECTIVES OF THE INTERVIEWEES

The interviewees agree that Japan has no broad tradition of immigration and has consequently been unable to develop a settled immigration culture. The sheer market size of Japan is mentioned as one possible reason (at least at corporate level). Many companies have not felt the strain to venture abroad; hence the need for a global mindset was absent.

To assess the sourcing strategies of Japanese companies for human resources, the interviewees stressed the importance of distinguishing between more conservative companies and more progressive ones. The more progressive companies are mainly those that already operate internationally and that have a higher degree of globalization. These companies are aware of the potential brain gain through foreign employees and the enhanced opportunities on the global market. However, such companies are still a minority. Conservative and more traditional companies mainly restrict their recruiting activities to within the national borders. However, when they do rely on immigrants, these are predominantly low-skilled part-time and non-regular workers, who are used to bridge temporary workforce shortages when demand peaks (especially in the manufacturing industry). These workers are “dispensable material”, who are immediately sacked when the economy slows down.

The interviewees repeatedly report that even foreign companies that have settled in Japan have become reluctant to appoint foreign managers as heads of their Japanese affiliates. It is much easier to survive in the Japanese economy with Japanese directors, who fully understand the language and the cultural peculiarities. In addition, companies with Japanese leaders enjoy a higher degree of acceptance in society.

Almost all interviewees support their evaluation with examples of failed immigration attempts. The most prominent one is the case of Filipino nurses in Japan. In 2006, the Japanese government signed an agreement with the Philippines allowing Japan to train and recruit Filipino caregivers. This attempt was clearly driven by a perceived scarcity of this set of skills. However, what seemed to be a first step in the direction of relaxing immigration laws for skilled workers was immediately eradicated when the first examination results of Filipino candidates were published. Due to the very demanding examination, only a small proportion of the examinees (a single-digit percentage) passed it.

The interviewees still consider migration laws to be very strict and rigid, although immigration repeatedly returns to the political agenda. Politicians have not taken any determined steps to effectively relax the immigration laws. It is simply not opportune for politicians to pursue such a strategy (even if they saw the need) as long as society does not accept it. Japanese society is still very hostile to anything that is not Japanese. The population fears that foreign influences could destroy their very subtle culture. This broad resistance within the population and within interest groups seems to be the main reason why no policy leader wishes to shoulder the responsibility and push immigration.



The interviewees question whether a relaxation of Japan's strict immigration laws would change much with respect to an increasing influx of highly skilled workers. The reservations are rooted in different issues. First, other economies such as China are growing rapidly. This attracts high potentials not only from the Asian area but also from all over the world. They are willing to develop their potential in such growing economies. Second, the language and cultural barriers may discourage many young professionals (especially from western countries) to enter the market. Discouragement is especially pronounced for Japan, because in many companies the prominent, if not the only official language is still Japanese. As a consequence, many Japanese people are unable to understand or speak English properly. The interviewees consider the language and culture to be very high barriers. Both are very difficult to learn and understand, and foreigners who move to the country for a limited period may wonder whether it is worth the effort. Japan remains an island, not only in geographic terms, but also in terms of the language and culture. Third, the country and the companies located there are simply not prepared for foreigners, and corporate cultures are not ready to actively integrate immigrants. The respondents claim that, in this respect, Japanese companies could benefit heavily from a bilateral exchange of workers. Japanese workers should spend at least part of their life abroad in order to understand other cultures and to raise acceptance and trust. China and South Korea have successfully embraced a policy of more or less open borders. Not only do both countries allow many foreign companies and immigrants in, they also send their students throughout the world to obtain knowledge and degrees from top universities.

For Japan, however, the interviewees identify a tendency that counteracts such practices. Japan does not only welcome a small number of foreigners, but also sends fewer and fewer students abroad. In the past, students were more eager to leave the country. Harvard University, for instance, recently reported the lowest number of Japanese students registered since the end of the Second World War. The interviewees assume that this generation, due to its relatively high wealth and prosperity, has not been under pressure to perform and leave their comfort zone, as was the case with many earlier generations in Japan. Another reason may be the problems young Japanese students face when seeking an appropriate job, a challenge that seems to be even more difficult after time spent abroad, since many Japanese companies still do not reward international experience. Company heads believe that students who have directly graduated from a local top university without any international experience are much easier to trim in line with the company's directives. The experts see this as a very problematic development with severe consequences for companies using such strategies. On the one hand, they are missing out on the opportunity to accumulate knowledge and therefore increase innovative power. On the other hand, the opportunity to establish contacts to other cultures and to understand them is wasted. These very students (with international experience) would make excellent future leaders who also understand and appreciate other cultures and who know how to make the best of all worlds.

## 7.2.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The small proportion of foreigners in Japan compared to other industrialized countries would make immigration a strong lever to cope with labor force shortages. However, D'Costa (2008) mentions three sets of institutional barriers (business practices, cultural and social factors, and immigration policy) that are responsible for this low contingent of foreign residents and foreigners' lack of motivation to immigrate into the country.

Japanese business practices include strong inter-firm relationships akin to the *keiretsu* system, involving long-term subcontracting arrangements that limit the entry of foreign firms and talented people (D'Costa, 2008).

D'Costa (2008) mentions the language, and cultural and social practices, which play an important role in daily business. In the results of his survey, Shikama (2005) documents that Japanese citizens still consider a foreign language to be one of the most prominent distinguishing features of foreigners. He emphasizes the importance of language as a symbol of individual and group identity and assimilation in a community. Not surprisingly, the language and cultural and social practices are the major constraints for non-natives to climb the hierarchy. Consequently, the enthusiasm of aspiring foreign professionals to seek a long term assignment in a Japanese company is highly damped. This may be different, therefore, for non-Japanese firms located in Japan.

Japan's immigration policy is heavily influenced by the Japanese self-concept of being unique, in that they represent an "island nation" with racial and ethnic homogeneity (D'Costa, 2008). Shin (2010) reported that, even in 2000, the idea of a closed country with the related discourse around mono-ethnicity dominated the minds of many politicians, and was widely shared by the Japanese public. She mentions a survey conducted in 2004 indicating that three quarters of the respondents were either reluctant or negative about admitting foreign workers. Shin (2010) and Tai (2009) rationalize Japanese immigration policy by the pre-World War colonialism of the country.<sup>46</sup> Since 2005, when the consequences of the demographic change kicked in, the Japanese government has started to rethink their policy and the nation's attitudes towards foreign residents and immigrants. The mono-ethnic image of society was negated and replaced by a social image of multicultural life side by side with foreigners by the Ministry of Internal Affairs and Communication [MIC] plan (Tai, 2009). Tai (2009), however, emphasized that this plan leaves the mono-ethnicity of the Japanese nation intact because foreigners are designated as multicultural and not nationals. Only the Liberal Democratic Party/Caucus for International Exchange in Human Resources [LDP/CPIEHR] proposed several changes that would make Japan an open country, a country containing immigrants. Tai (2009) is convinced that, by taking such action, Japanese immigration policy has reached a turning point to become more inclusive and to present Japan as being multicultural. D'Costa (2008) argues that a lot remains to be done especially with respect to Japanese bureaucracy, laws and regulations for immigration.<sup>47</sup>

Although the Japanese are generally courteous to short-term visitors, they are still perceived to be inhospitable to foreigners. Simon and Sikich (2007) investigated public attitudes toward immigrants and immigration in Japan and seven other countries. Appendix 10 depicts the result of this survey for Japan, the USA and Germany.<sup>48</sup> Despite a much lower

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<sup>46</sup> The US pressure to demolish the colonial institutions led postwar policy makers to reinforce their exclusionary policy against the colonial emigrants. The continuing exclusion of remaining colonial subjects (from Korea and China) was the consequence of replacing the imperialist self-image as an ethno racially hybrid with a homogeneous national self-image (Shin, 2010).

<sup>47</sup> Immigrants often come up against arbitrary decisions. One example is the process of issuing visas, which is at the discretion of the visa officer, often demanding a personal interview. Another example is the process of naturalization, which opens the door to arbitrary behavior since it is still based on the vague criterion that "behavior and conduct must be good" (D'Costa, 2008).

<sup>48</sup> For most of the items, Japanese opinion is in line with the opinion of either the USA, Germany or of both. The only noticeable difference concerns the question whether immigrants make the country more open to new ideas. In Germany and the USA more than 50% of the respondents believe that this is the case. This opinion is only shared by 20% of the Japanese respondents. On a first view this alignment of opinions might look comforting. One has however to consider that this attitudes have developed with totally different background. Both, Germany and the USA, are countries with double digit immigration rates and percentage of foreign residents.

number of immigrants compared to the USA and Germany, the Japanese population has already developed similar negative opinions on certain issues, such as increasing the number of immigrants or the responsibility of immigrants for increased crime levels. It is reasonable to assume that actuating the immigration lever in Japan would generate greater frictions than in countries with traditionally high immigration flows.

### 7.3 CROSS-COUNTRY COMPARATIVE REFLECTIONS ON IMMIGRATION

Although the two countries are similar with regard to their economic (high-tech industry) and political orientation (democracies) the behavior profile of companies and policy is totally different concerning the current handling and exploitation of the immigration lever.

Switzerland is an open country with few immigration limitations. Part of this openness is due to a long history of immigration that has enabled the country to appreciate the high value of immigrants in establishing a prosperous economy, which in turn has helped to develop an immigration culture. Although the country practices cultural pluralism, it is not free from negative attitudes and discriminatory behavior. This is also reflected by the political agenda, in which anti-immigrant initiatives are periodically launched with varied justifications. However, the country manages to find an acceptable compromise to reconcile the unappeased demand of the prospering economy for foreign labor and the fear of foreign infiltration (xenophobia). This does not mean that there is no room for improvement, especially concerning the question of the naturalization and assimilation of the many immigrants.

By contrast, Japan has no historical tradition of integrating immigrants. Several factors have allowed the country to resist internal and external pressure for immigration. One of the most important factors is the deep belief in a homogeneous cultural and national identity. The fear of losing this identity is widespread in all population groups, and prevents policy makers from following a strategy that embraces immigration. If immigration is to become a valuable lever for Japan, these attitudes and fears must first be eliminated, and solutions for change must be devised. Recommendations will therefore certainly have to focus on this topic.

Cultural pluralism is practiced to an even greater extent by companies located in Switzerland than the country itself. Immigration currently represents the lever for coping with labor force scarcity, and the economy would not prosper as much without the immigration of skilled workers. However, concentrating on immigration also harbors certain risks. Immigration will only be a solution as long as the opportunities for immigrants are more favorable in Switzerland than in the countries of origin or other developed countries. If conditions change, for instance, due to similar demographic changes in the countries of origin, the flow of immigrants would soon dry up. The extensive exploitation of the immigrant lever may also trigger resistance by the native population, increasing the speed of erosion of this lever. Recommendations need to be given on how companies can appease this growing resistance.

By contrast, companies in Japan are highly reluctant to recruit from international markets. Some of their current business practices even undermine activities that would help broaden the horizon of young skilled workers. Stays in foreign countries to gain experience or additional education are not rewarded. However, such workers would have the potential to support the establishment of a global culture in Japanese companies. Recommendations for Japanese companies should mainly be developed around this topic.

Recommendations for both countries include the alignment of regulations and laws, as well as measures to increase tolerance towards immigrants. Crepez and Damron (2008) are convinced that a comprehensive welfare state has the capacity to shape what they call “welfare chauvinism”.<sup>49</sup> Such a comprehensive welfare state is characterized by a high degree of decommodification, i.e. the degree to which welfare services such as education and healthcare services are not linked to the market and provided to all citizens.

In summary, the interview and literature analysis indicate three key areas of importance when optimizing the immigration lever.

**Table 3: Key areas and topics regarding immigration**

Key areas	Key topics
Legislation and regulation	Visas and quotas Accessibility to benefits of welfare state (education, health care, social security) Integration programs and legislation for naturalization Attractiveness of country (taxes, charges, immigration procedure)
Disposition of companies	Communication skills Knowledge and experience with foreign cultures Multiculturalism Exclusionary business practices Attractiveness
Resistance in the population	Stereotypes and attitudes Fears (job losses, being swamped by foreigners, loss of private and social security)

Source: Author's design

## 8 EXPLOITATION OF THE PRODUCTIVITY LEVER

Higher productivity growth, “the holy economic grail”, may offer a viable alternative to a sheer numerical increase in labor supply for both countries and the companies located there (Magnus, 2010). It is not yet clear how this alternative is perceived among experts and business leaders in both countries.

The objective of the following chapter is to evaluate the present status and deficits of this lever based on interviews and literature.

The structure of the chapter remains the same as for the preceding levers.

### 8.1 STATUS IN SWITZERLAND

#### 8.1.1 PERSPECTIVES OF THE INTERVIEWEES

In the opinion of the interviewees, Switzerland and the companies based there have already reached a high productivity level which, however, still leaves room for improvements. The interviews reflect a strong belief in future economic growth driven by quality and its improvements, and less in a purely quantity-driven growth. According to the interviewees' beliefs, the topic of productivity increase should become more important not only on account of demographic developments, but also due to increasing global competition. Increasing

<sup>49</sup> Welfare chauvinism refers to the stereotype that immigrants are attracted to a country due to its general welfare benefits, that they do not pay taxes, take away jobs from native workers, depress wages and abuse healthcare and public services.

productivity in companies is repeatedly perceived as an ongoing venture that does not happen automatically. Instead, it requires determined decision making and strategic considerations. However, productivity growth is not expected to make a sudden leap forward. Most interviewees expect a steady increase at about the same pace as in the past, originating primarily from better education (investment in human capital) and technological improvements based on innovations. Education and innovation are not perceived as two mutually exclusive factors, but rather as an imperative reinforcing one another. Consequently, the brain power that can be accumulated within companies and the country as a whole is seen as a critical and decisive factor for future success.

The existing essentials for high productivity cannot exclusively be assigned to the government or businesses. They often work hand in hand in this regard (for example in the area of education). A certain overlap is therefore unavoidable. Nonetheless, the following paragraph first reports essentials as being mainly the responsibility of the government (or politics). The essentials for which companies are responsibility will then be presented.

At national and regional level, Switzerland features a certain degree of specialization for some industries (e.g. banking and pharmaceuticals). Consequently, the legal and regulatory framework offer even more favorable conditions for companies in certain industries to settle and prosper there. The interviewees' opinions differ with regard to the prediction of a further specialization at national level.

To a certain degree, this specialization is mirrored in the Swiss education system. This holds true especially for universities, which represent an important instrument for the country's strategic orientation. Not all universities in Switzerland tend to offer all disciplines. Instead, they aspire to high-class education and research in selected areas. This strategy implicates a clear positioning of universities to achieve a worldwide reputation, to lure high potentials (both students and professors) into the country and, consequently, to increase innovative power via brain gain. In the face of an impending decline in the number of students, this brain gain could become a critical factor for sustaining location attractiveness.

The dual education system is an additional education-based instrument applied by the government that the interviewees emphasized. The experts stress the merits of the school and practice-oriented system, allowing young students with a low empathy for theoretical knowledge gain to obtain secondary education via an apprenticeship after their primary education. Experts praise the opportunity offered by the system for a smooth transition from school to work, thereby reducing youth unemployment.

Managers too, emphasize the importance of the apprenticeship system, which provides them with an important strategic instrument to reconcile the demand and supply of well-educated young employees. The system is mainly driven by corporate demand, meaning that a student who wishes to embark on an apprenticeship must first sign a contract with a company. Consequently, (based on their future needs) companies influence the number and expertise of young professionals graduating from vocational school. The merits of the system for companies are relatively obvious. First, it allows them to teach young students expertise that is urgently required in the future. Second, the system produces highly valued experts with practical experience. Finally, apprentices are an important source of labor. One manager even emphasized that some company activities could not be run without this source. Acquiring new talent and educating them is an important strategy. However, making the most of existing work forces is becoming increasingly important in the light of a shrinking supply. Sustaining the motivation and satisfaction of existing employees enhances their

productivity, and may reduce the demand for new employees. Managers see this as an important task, which can be met by providing education, job security, incentives and other benefits. Often, money is not the most appropriate instrument to sustain motivation in the long run. Highly motivated employees have two important effects. First, they create a positive picture of the company in their environment, which could attract new talented and highly motivated people into the company, a factor that should not be underestimated in an environment of scarcer labor supply. Second, they are more productive than unmotivated employees and are more committed to the company.

Managers state that companies constantly scour their current business portfolio to decide whether it still makes sense to have certain activities located in Switzerland. Those activities that especially qualify for off-shoring are those that can easily be detached from others, that are repetitive, not of strategic importance, and low value generating, but that should still be performed by the company itself. This development has been enabled and supported to a huge extent by improving information and communication technologies [ICT]. The interviewees are convinced that further improvements by new innovations will allow companies to specialize to an even greater extent in cutting-edge activities where a specialized workforce can add substantial value.

Productivity increases in companies are created not only by technology, but also by process innovation. The interviewees mention the example of companies that do not simply attempt to automate their current activities, but take into account aspects of high automation at an early stage of the product or service development. In the process, the companies reduce the input of human labor where it does not add additional value.

Another measure already applied in the light of the strong currency, irrespective of demographic reasons, is the increase in working hours (a measure also mentioned in Section 4.5).<sup>50</sup> Some interviewees claim that this increase was a first step in the direction of breaking a taboo. It is therefore conceivable that such a model could also be applied in the light of labor force shortages.

Although the interviewees clearly consider the above essentials to be useful in also raising productivity in the future, they have certain reservations concerning some of them. Specialization at national level and at universities is often recognized as a strategy that harbors a cluster risk. Areas that could possibly gain importance in the future could be neglected. In this context, experts refer to the recent political discussion, which revolves around the funding of universities. Proponents of an incentive-driven approach advocate a closer link between funding and the output produced by an institution. As negative factors, opponents point to the difficulty in objectively measuring output and the resulting dependency of universities on industry, increasing the blind spot for fundamental research that does not interest companies. Interviewees also claim that educational measures taken to further strengthen the economy always have a certain “pork cycle” effect, because the measures lag behind developments in the economy. Measures taken today may be inappropriate for meeting tomorrow’s demand.<sup>51</sup>

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<sup>50</sup> This increase does not allow for a higher productivity in terms of output per hour worked, but increases productivity in terms of output compared to input. In other words, a higher amount of output can be achieved with the same amount of human resources.

<sup>51</sup> One example mentioned was the alleged scarcity of well-educated computer scientists during the 1990s, when the government took measures to attract more people into this academic discipline. However, many of the computer scientists who were attracted by these measures were hit by the dot-com bubble burst.

There may also be opposition to the increase in weekly hours worked. The “40-hour week” is still deeply rooted in society, and may be difficult to change. This could imply a certain danger for companies facing competition from emerging markets, where they can fall back on a younger workforce willing to work long hours.

Since productivity gains will mainly come from education and innovation, the increasing age structure of the workforce could become an additional challenge for companies with regard to the aspects already discussed in part in Section 4.5. According to the interviewees, elder employees are often less willing than younger employees to undergo further training and to enhance their human capital.

### 8.1.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The interviewees assign high productivity to the Swiss economy. The literature reveals that this high productivity is increasingly jeopardized by a substantial lag in productivity growth over the last decade. Although productivity growth reached a relatively high value of 2.2% in 2010, the average productivity growth over the last ten years (0.83%) remains far behind the OECD average of 1.77% (OECD, 2011c).<sup>52</sup>

Productivity and productivity growth rely on innovativeness and, hence, on education and R&D expenditures as the most important pillars. The interviewees especially pointed to education as an important driver. Lay, Kinkel, Jäger, Hanisch, and Waser (2009) support this view, and demonstrate the importance of highly skilled employees (with tertiary education) in increasing TFP.<sup>53</sup> The interviewees’ assessment of the Swiss education system is also backed by the literature. OECD surveys assess Switzerland as having a well-established education system. The system releases an increasing number of graduates with a tertiary education, thanks to the creation of many new universities of applied science (OECD, 2006, OECD, 2009). Rauner (2004) characterizes the Swiss dual education system as excellent and worthy of imitation by other countries, such as Germany. In addition, both the interviewees and the OECD praise the Swiss education system for its great ability to ensure the transition of young people from education to work.

According to Guellec (2006), the total R&D expenditure (government and industry) in Switzerland is one of the highest among OECD countries. Businesses account for more than 70% of total R&D expenditures, indicating a very favorable business climate. Measuring the output of R&D expenditure by the number of patents, again Switzerland occupies a top rank among OECD countries.

Given these facts, the question arises why productivity growth is relatively moderate compared to other countries. The following paragraphs attempt to shed light on this issue.

Economic surveys completed during the period of marginal growth from 2000 to 2010 (OECD, 2006) and 2009 (OECD, 2009) mainly blame the low productivity growth in sheltered sectors as being the main responsible factor.<sup>54</sup>

<sup>52</sup> Average values were calculated based on the tables published in OECD (2011a).

<sup>53</sup> Rudolf and Zurlinden (2010) separate the average annual productivity growth in Switzerland between 2000 and 2006 (1.68%) into labor input (0.86%), capital input (0.47%) and multi-factor productivity (0.34%). In addition, 0.48% of the labor force input is due to an increase in labor quality. Such labor quality increase is directly related to age (number of experienced workers) and education (number of workers with a higher level of education (Baldassarini & Di Veroli, 2008).

<sup>54</sup> The high price level for goods and services relative to other high-income countries, despite the relatively modest taxation of goods and services consumed domestically, indicates that productivity is low in service sectors that are not open to international competition. Although the 2009 survey identifies progress in eliminating barriers to competition, significant gaps with respect to best practices remain (OECD, 2009). Gaps are particularly prominent in network industries, especially in telecommunications, energy and postal services, where government ownership is widespread. In addition, the highly

Guellec (2006) identifies misinvestments of R&D expenditure, leading to the small growth in innovation-driven productivity. According to Guellec (2006), Switzerland has a deficit in investments in the fast-growing business service sector. Most of the money is used in traditional fields and only minor amounts in emerging technologies.<sup>55</sup> Acknowledging the intense financial support of R&D activities at universities by industry and the well-established relationships between universities and industries, it must be assumed that the pressure to focus on such emerging technologies from the business side is quite low. It could be explained by either a low-risk disposition of companies or the high aversion of the Swiss university community to too much intervention by companies because they are apprehensive of neglecting their main mission – basic research (Gross, 2011). Guellec (2006) mentions the fact that the ownership of patents arising from collaborations between universities and industry usually remain with the company. As a consequence, the knowledge acquired at universities is only partially exploited, or with longer delays, because young university researchers are inhibited or show little interest in exploiting new ideas in spin-offs if they cannot expect full or major incentives from such efforts.

The importance of the “how” and “where” R&D money is spent is further supported by a study conducted by Arvanitis and Sturm (2008). The importance of key drivers for innovation might differ from country to country. For instance, the country studies of Switzerland, Germany, Italy, Spain, France and the United Kingdom [UK] show a positive correlation between human capital/R&D activities and productivity. For Switzerland, Germany and Italy, the concentration on product innovation seems to be the driver for productivity. By contrast, for the UK, France and Spain, the concentration on process innovation boosts productivity.

In many of the countries which surpassed Switzerland with respect to productivity growth, venture capital flow seems to be more developed than in Switzerland. The flow of venture capital is small, and tends to be used by established firms’ projects rather than by younger, innovative firms. The weak development of venture capital may probably be another factor that explains the difficulty of nurturing new industrial activities in emerging technologies (Guellec, 2006; Ernst & Young, 2003; VentureCapital, 2011).<sup>56</sup>

There are several objections concerning education in the literature. The OECD survey points in particular to the relatively strong variation in skills among different areas of different socio-cultural backgrounds.<sup>57</sup> Vocational training by companies for older people is not well developed in Switzerland (see Section 5.1). In addition, Swiss households spend relatively

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protected domestic agricultural sector incurs substantial costs for tax payers, owing to one of the highest levels of subsidization in the OECD.

<sup>55</sup> Guellec (2006) compares total R&D expenditures (government and business) with the output, namely the total number of filed patents for 14 OECD countries (ten European countries, Japan, Korea, Canada and the USA). Switzerland ranks top with respect to R&D spending and Switzerland’s patent output also looks promising at first glance. However, a majority of these new patents belong to the more traditional fields and only a minority to emerging ones, such as ICT, biotechnology and nanotechnology. Many of the countries that surpassed Switzerland in the productivity ranking have a much higher share of their patenting activities in higher value adding fields. It could be concluded that the poor performance of the Swiss service sector (ranked last among 14 countries) could partially be explained by the number of ICT patents filed. ICT is of utmost importance in this sector.

<sup>56</sup> A typical example of such risk aversion can be found in the development of nanotechnology. In 1986, H. Rohrer and G. Binnig received the Nobel Prize for the Scanning Tunneling Microscopy invented in IBM R schlikon. Microscopy is the basic technology to image and manipulate on a nanometer scale. Neither the invention nor the Nobel prize boosted activities in Switzerland. It was not until 2001 that research in nanotechnology became a main research focus within the Swiss National Science Foundation [SNF]. According to the statistics published by Guellec (2006), Switzerland’s patenting activities in this field remained low. Hwang (2010) also assigns Switzerland a relatively low nanotech activity with a moderate amount of technology development.

<sup>57</sup> The extent to which the different school systems in the cantons play a role remains to be proven. However, the government is trying to minimize these differences through the so-called “HARMOS initiative”, and resistance to it remains substantial in many areas of the country (Schweizerischer Arbeitgeberverband, 2011).



small proportions of their budget on such education. Especially people in the 45-55 age bracket spend only 1.3% of their budget, although they are a long way from the statutory retirement age (Reiman, 2006). Both observations indicate the low accumulation of human capital among older people, an evolution that will certainly jeopardize productivity, especially in an ageing society.

## 8.2 STATUS IN JAPAN

### 8.2.1 PERSPECTIVES OF THE INTERVIEWEES

The interviewees are convinced that the quest for profitability improvement is omnipresent in companies located in Japan. Nevertheless, they found it rather difficult to elicit concrete examples, but mentioned several areas for improvement. To capitalize on these improvements, different kinds of optimization will be necessary, ranging from technological to cultural issues, from individual to company level, from business to policy level, etc. All these levels are not exclusive, and influence each other considerably.

The interviewees' opinions diverge when it comes to the increase in productivity in the manufacturing sector. Some believe that most of the productivity potential has already been exploited; others are convinced that Japan and the companies located there will always surprise the rest of the world and come up with new solutions that nobody could ever have thought of before (e.g. new technologies or processes).

Technological progress leading to increased productivity may occur in various areas. The interviewees claim that some of the technological progress, especially in the area of human interaction with machines (robotics), was and remains massively driven by the foreknowledge of an ageing and shrinking population and workforce. This has not only driven technological innovation, but also created a culture in which technological progress by innovation was highly appreciated by society at an early stage. By contrast, in many western countries a more technology-averse culture is predominant, where progress equates job losses.

Education in Japan is generally regarded as very good. Nevertheless, certain symptoms of an inflation of university degrees exist, meaning that for many jobs that can be filled in other countries without graduates, a degree is mandatory in Japan. Hiring companies tend to prefer to work with the "raw material" and to train graduates from universities themselves. Graduates who join a company receive extensive on-the-job training based on a regular rotation principle, making them generalists rather than specialists. The rotation principle builds on the assumption that an employee will join a company for life, so becoming acquainted with all areas of a company enhances productivity considerably. It is conducive to rapid problem-solving because the networks are very well established.

The interviewees expressed their doubts, or at least a certain fear, that innovation will become increasingly difficult in Japan's companies because of their ageing practices and, in terms of race and gender, often homogenous staffing practices. Two interviewees even added that most innovations in Japan were facilitated by outstanding personalities, which are often lacking in today's younger generations.

A phenomenon that is not unique to Japan but is especially distinct in this country, which has a negative effect on productivity, is rooted in the rigid hierarchical structure of companies. The interviewees claim that employees feel obliged to stay at work until their superiors have left, even if there is no work to be done. This cultivates a corporate culture of

unproductive behavior. Open-plan offices are a manifestation of this culture and further promote it. Open-plan offices enable workers to track hours of attendance easily. If someone is seen leaving the office earlier, they may often be accused of being lazy, although they may be equally or even more productive than other employees. Some interviewees stressed the importance of top-down measures in this regard. They reported examples where managers started to leave their offices at 6 o'clock, but returned after most employees had left to complete their work, merely to signal that it was acceptable to leave the office upon completion of the work.

Interestingly, one expert claimed that it would be important, in view of higher productivity, to start rethinking the strong orientation towards Tokyo, and to increase the self-determination of smaller entities. The strong ministries that were important in post-war Japan in rebuilding the country by concentrating power on a shared target, now hamper innovation, because many interests in these ministries call for harmonization and, therefore, often not the best solution. Empowering smaller entities, for example prefectures, would certainly increase competition for companies among prefectures and would most probably be very beneficial to innovation. There is an inherent danger that the autonomy of these entities would only be fictional, in reality simply adding an additional bureaucratic layer, reducing productivity yet further.

On the one hand, services in Japan are very customer-oriented, with a higher standard than in Europe, for example; on the other hand, this makes them very inefficient and, therefore, a potential place for hidden productivity reserves. The majority of the interviewees are convinced that productivity could theoretically be massively increased in this area. In practice, though, the question needs to be raised whether service quality would suffer from a productivity increase. A reduction in service quality would undoubtedly put a company introducing such measures at a competitive disadvantage. Consequently, nobody would start to implement such measures. Nevertheless, the interviewees are convinced that if the labor market dried up, a decrease in service quality would be accepted by customers (if introduced across the board). Other areas the respondents identified for productivity improvements are most sectors restricted to the domestic economy. Cartel-like structures and agreements reduce the interests of the businesses concerned to increase productivity. Examples mentioned include the transportation and construction industries, where special interests still exist and inefficiency is even (intentionally or unintentionally) fostered by the ministries. As soon as businesses start to venture into the international market and feel the pressure of globalization, they become very efficient and efficiency is then also encouraged by the ministries.

### 8.2.2 COMPLEMENTARY PERSPECTIVES FROM THE LITERATURE

The ambivalent opinion of the Japanese interviewees with respect to productivity growth clearly mirrors the statistical data published by the OECD (OECD, 2011a). This data assigns Japan a productivity growth that remains below OECD averages for trend values. Although in 2010 the value reached a level of 3.2% (OECD average 1.8%), the average values of the period 2006-2010 (0.88% versus OECD average of 1.75%<sup>58</sup>) and 2000-2010 (1.55% versus

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<sup>58</sup> Average values were calculated based on the tables published in (OECD, 2011a).

OECD average of 1.77%) indicate a decreasing growth for the first decade of the 21<sup>st</sup> century.<sup>59</sup>

In their most recent projection, Jorgenson and Vu (2011) claim a rise in developing Asia, according to which Japan will rank behind China and India. In his view, the growth rate of the country will be suppressed further by the demographic trend. The capital intensity of the Japanese economy has been rising since the 1970s, and is high compared to its advanced economic counterparts. However, capital productivity has since been declining, and is lower than in the UK or the USA (Syed & Lee, 2010).

With regard to the main drivers for innovation, education and R&D expenditure, Japan is well positioned. In line with the interviewees' opinion, the OECD characterizes the education system as being of outstanding quantity and quality (OECD, 2011a). In an international comparison based on the PISA test, Japan ranks among the top four countries in all disciplines. Japan seems to be outstanding with respect to lifelong learning, at least when referring to the household expenditure for vocational education. On average, Japanese people in the age bracket of 45-55 spend 11.4% of their household budget on vocational training. In comparison, the Swiss and US Americans in the same age bracket spend only 1.3% and 3%, respectively (Reiman, 2006). In a comparison with 14 OECD countries (ten European countries, Japan, Korea, Canada and the USA), Japan is outstanding with respect to R&D spending and outcome, measured by the number of patents filed (Guellec, 2006). Moreover, Japan ranks high with respect to patenting intensity in emerging technologies such as ICT, nanotechnology and biotechnology.

Considering Japan's ranking with respect to education and R&D expenditure, the low productivity growth is difficult to understand. The reverse development of capital employed and capital productivity serves as a strong indicator of an inefficient utilization of input into the economy.

Authors identify one source of productivity stagnation in a misallocation and inadequate usage of R&D expenditure (Fukao, 2010; JETRO, 2007; Syed & Lee, 2010). Most of the enormous R&D spending is invested in research for manufacturing, where the impact on productivity growth is generally low. Fukao (2010) demonstrates the importance of a shift of R&D expenditure from the manufacturing to the non-manufacturing sector by the large difference between the TFP growth in manufacturing sector (annual growth 2.9%) and non-manufacturing sector (annual growth 0.57%) between 1970 and 2006. Investments in the service sector total only 12% of all R&D investments, an amount that is far below the OECD average (25%) and that of the USA (43%) (Syed & Lee, 2010). Blinder (2006) points to the importance the sector will gain in the 3<sup>rd</sup> industrial revolution, in which manufacturing jobs will strongly decline in number due to off-shoring, while jobs in the service sector will increase. The service sector currently accounts for about 70% of Japan's GDP, and is expected to gain even more in importance (JETRO, 2007).<sup>60</sup> The reluctance to invest in the service sector may be partly rooted in a misleading, but according to the interviewees' statements commonly accepted, opinion that an increase in productivity in this sector will lead to an impairment of

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<sup>59</sup> The latest OECD survey on Japan strongly points to the damage to the economy caused by the earthquake and ensuing tsunami on 11 March 2011. According to this survey, this damage can not yet be assessed (OECD, 2011a).

<sup>60</sup> The gain in importance will mainly come from the increasing demand for health care and care giving services, as a consequence of demographic developments. The trend encountered in all industrialized countries to offshore and outsource production to countries with lower factor costs will act as an additional driver, strengthening the importance of the service sector.

quality. In addition to misallocation, a lack of foreign and domestic competition, inadequate attention to the development of human capital, and an absence of well-defined standards and benchmarks have been identified in a report published by the Ministry of Economy, Trade and Industry [METI] as factors responsible for the lagging productivity growth in the service sector. In addition, the study group noted insufficient use of IT in this sector (JETRO, 2007).

A broader investigation of the productivity level and growth reveals that, irrespective of the sector, Japan lags behind countries such as France, the UK and the USA with respect to all relevant factors indicating how efficiently and intensively input is utilized for production, such as labor productivity per hour, labor productivity per capita, and TFP (Cette, Kocoglu, & Mairesse, 2009). This lag can partially be explained by the large proportion of so-called low-productive activities, such as agriculture, construction, trade, and catering. Jones and Yokoyama (2006) blame Japan's innovation system for this, due to its feeble interactions between research institutes and businesses, the slow diffusion of knowledge and innovative technologies, weaknesses in human capital development, low incentives for innovation, and low venture capital spending. Jones and Yokoyama (2006) call for modernization and internationalization through an approach with the following major activities: first, strengthen venture capital investments to raise the present low level of 0.05% of the GDP. Second, implement policies to enhance the mobility of workers to improve interactions between research institutes in the government, businesses and the higher education sector. Third, upgrade product market regulation and competition policy to promote diffusion of technology. Fourth, improve the system of intellectual property rights to strengthen incentives for innovation. Finally, strengthen human capital development to boost the generation and diffusion of innovation.

The analysis by Guellec (2006) presents additional data concerning R&D investments and patenting outcome. At 3%, university funding by businesses is low compared to the 14 OECD countries considered in the report by Guellec (2006), indicating a very low commitment of Japanese firms to public research.<sup>61</sup> In the same report, Japan ranks last with respect to venture funding although patenting activities are very high (ranked second). The small number of publications in scientific journals (~500 per million inhabitants) contrasts strongly with the patent publication, and could be an indicator of the closeness of the Japanese R&D community. This assumption is partially supported by the very low rates with respect to domestic ownership of foreign patents, and vice versa. In both measures, Japan ranks last compared to the 14 countries considered (Guellec, 2006).

The OECD survey of 2011 mentions the high rate of after-school lessons and low government spending on pre-primary school as deficits (OECD, 2011a). What is even more critical is the fact that, relative to the country's population, Japanese universities do not stand out in international comparison. Part of this low performance could be assigned to the different role (compared to the role in other countries) universities assume in education, as

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<sup>61</sup> Research collaborations are high in quantity, but the average size of projects with respect to spending is small. A reason mentioned for the low financial engagement of companies is regulation concerning intellectual property rights, i.e. the company is compelled by co-ownership to obtain consent from the university to license intellectual property. A university is thus capable of halting progress in the practical application of the invention by simply asserting its rights (Motohashi & Muramatsu, 2011). Motohashi (2004) additionally identifies systemic deficits (rigid labor and underdeveloped technology market) as well as the "not invented here" syndrome as obstacles for intense university industry collaborations. He believes that in Japan, as in the USA, venture business and R&D focused SME's should play an increased role in university/industry collaborations.

mentioned by the interviewees (the most important education is obtained in on-the-job training in companies). A lack of competition and internationalization, as well as weak interactions between universities and firms may be other reasons. The OECD survey (OECD, 2011a) and Fukao (2010) mention Japan's dual labor market system as a significant drawback. Based on this system, Japanese firms have started to employ an increasing number of non-regular and part-time workers to gain a greater degree of flexibility (Fukao, 2010). Non-regular and part-time workers are not only excluded from many benefits of the social security system, but generally also from vocational education offered by the company. In addition, an increasing number of firms consider human capital formation to be the responsibility of individual employees (Jones & Yokoyama, 2006).<sup>62</sup> All these measures will account for a lack of knowledge transfer to workers affected by these company practices and, due to the inhibiting effect on human capital accumulation, have a negative impact on productivity, at least in the long run.

### 8.3 CROSS-COUNTRY COMPARATIVE REFLECTIONS ON PRODUCTIVITY

A comparison of the two countries with respect to the level of productivity growth reveals similarities. Although productivity growth was relatively substantial for both countries in 2010, trends for the first decade of the 21<sup>st</sup> century indicate a decrease in productivity growth.<sup>63</sup> In this context, Switzerland's position is even worse than that in Japan. Nevertheless, if the interviews are taken as an indicator, this fact is recognized to a lesser extent by Swiss experts and managers.

Both countries have a well-developed, albeit different, education system that is outstanding with respect to quality and quantity. However, insufficient vocational training opportunities for older workers offered by companies jeopardize the contribution to productivity of the older cohort. Older workers are often excluded from company-financed vocational training, either due to a lack of willingness or an expected low payback of the costs on account of the approaching retirement. In Switzerland, the disposition for privately financed vocational training among people aged 45+ is low (compared to Japan). In Japan, non-regular or part-time workers are generally excluded from vocational training. The trend to employ more part-time workers or non-regular workers in all age brackets, but especially in the older age bracket, decreases the intensity of vocational education.

Although the countries and the firms located there invest heavily in R&D activities, the investments fail to generate an appropriate output. In part, the low output is due to a misallocation of investments. For Japan, the data reveals major R&D investments in the manufacturing sector and not in the fast growing service sector, which is gaining in importance in developed economies and in countries with a fast ageing population (health care, care giving, etc.). Experts and managers from Japan attribute the high reluctance to change in the service sector to fears associated with a decline in quality through change. The low productivity growth in Switzerland is due to a concentration of R&D activities on traditional fields with a low return on investment. Consequently, the proportion of patents filed in real cutting-edge science (ICT, biotechnology, nanotechnology) is relatively small. Off-

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<sup>62</sup> This may be an explanation for the relatively high proportion of household budget spending on training.

<sup>63</sup> It is difficult to say whether the higher productivity growth in 2010 marks a trend reversal. Authors point to the fact that such short-term productivity data (real-time productivity data) are often subject to major adjustments due to a revision of the source data (Hara & Ichiue, 2011).

shoring is an activity mentioned by interviewees from Switzerland to free capacity to become more active in such emerging technologies.

Although the publication intensity in basic research is high, exploitation of the research results for new product and process developments is weak in Switzerland. This slow adoption of new technologies, highlighted by the literature, is not mentioned by any of the interviewees as a major deficit. At first glance, the finding of a slow adoption of technology is surprising, because the country's research community is highly competitive, relationships between academia and firms are well established, and the commitment of industry to academic research is extraordinary. The key factor explaining the slow adoption to new technologies seems to be the weakly developed risk disposition among firms and, particularly, among venture capital investors. The adoption of technology is also slow in Japan. Some of the determinants of the speed of technology adoption are especially unfavorable in Japan: venture capital is scarce, openness, internationalization and hence exposure to competition in the R&D field is small, and there is not a large propensity for firms to support academic research.

In summary, the results from the interview analysis and literature study call for improvements in several key areas.

**Table 4: Key areas and topics regarding productivity**

<b>Key areas</b>	<b>Key topics</b>
Macroeconomic settings	Openness and competitiveness of markets
Education	Vocational training Practice-oriented education Balanced influence of industry on education
R&D activities	Focus on sectors with high productivity potential Collaboration between universities and industry Support for academic research by industry Research in emerging and high-risk technologies at universities Internationalization Openness and competitiveness in R&D
Corporate culture and strategy	Focus on high value-generating activities Motivation of employees Elimination of stereotype- and culture-based barriers to innovation and productivity growth
Venture capital	Promotion of venture capital Willingness to take higher risks in the area of cutting-edge technology Support for spin-offs and R&D-based SMEs to exploit university research

Source: Author's design

## 9 RECOMMENDATIONS

In the preceding chapters, the present approach of Switzerland and Japan on coping with the challenge of a shrinking and ageing labor supply was outlined. Four levers were identified as instruments that can be used to meet the challenge. The facts and objections presented for each lever lay the foundation for defining recommendations.

The objective of this chapter is to present recommendations for each lever and to concretize them by presenting activities that serve as starting points to implement recommendations.

This chapter is structured according to the four levers; recommendations are introduced for each lever.

Recommendations for each lever are displayed in a table in the respective chapter. In each table, the recommendations are grouped according to their assignment. They are assigned to either one or both countries and to the party mainly responsible – business leaders or policy makers. The scope of recommendations is introduced by bullet points. Not all recommendations are discussed in detail. The selection criteria are their complexity and potential.<sup>64</sup> Appendix 11 ff. give an overview of all recommendations, the activities required to implement them and the co-operative effects between the different levers.

### 9.1 RECOMMENDATIONS TO INCREASE THE PARTICIPATION OF OLDER WORKERS

The participation of older workers is influenced predominantly by stereotypes, willingness and motivation, employability, appropriate work models and pension law-specific factors. Recommendations should therefore pay close attention to these areas.

**Table 5: Recommendations to increase the participation of older workers**

*Recommendations for business leaders in Switzerland and Japan*

- Intensify vocational training for older workers with respect to quantity and quality
- Implement two-way mentoring
- Exchange best practices

*Recommendations for business leaders in Switzerland*

- Implement alternative workplace, work time and compensation models
- Create a corporate culture that appreciates age and experience

*Recommendations for business leaders in Japan*

- Implement work time, work place and employment models that support corporate allegiance
- Exploit (as a foreign company) the pool of neglected, older workers

*Recommendations for policy makers in Switzerland and Japan*

- Change pension law and regulations
- Foster cultural change in society

Source: Author's design

*Intensify vocational training for older workers with respect to quantity and quality (Switzerland and Japan):* Companies must first eliminate negative stereotypes and any form of discrimination with respect to accessibility to vocational training. Training programs must be tuned bilaterally to the needs and psychological mechanism of knowledge acquisition of older adults. Learning goals have to be implemented in the performance, development and incentive plans to increase the motivation and commitment of employees to actively

<sup>64</sup> Recommendations regarding the modification or implementation of laws and regulations by policy makers are often easy to understand by the activities suggested in Appendix 11 ff. and therefore require no further discussion.

participate. A frequently expressed concern is the cost of such training. Since both employees and employers benefit from training, it could be financed via a fund amassed over the years by both parties. The activities of this recommendation have a positive co-operative effect on productivity (higher skill sets, greater motivation) and immigration (increased employability of older staff means less immigration and, as a consequence, less resistance).

*Implement two-way mentoring (Japan and Switzerland):* Brain drain and a lack of technological knowledge among older workers can efficiently be minimized by two-way mentoring between young and old employees. Multigenerational teams are ideal environments to identify critical knowledge and their owners and potential recipients, between whom two-way mentoring needs to be established. In addition, the dialog induced by the mentoring program fosters intergenerational acceptance. The implementation of learning goals in performance and incentive planning grants the program the appropriate attention, and emphasizes the importance assigned to such activities by the management.

*Implement alternative workplace, work time and compensation models (Switzerland):* Switzerland can learn from the many Japanese models discussed in the preceding chapters. Even those that failed in Japan due to cultural attitudes (teleworking) could be successful, because Swiss workers are less burdened by such cultural attitudes as a strong commitment to the firm, a strong sense of belonging, corporate identity, etc. Workers from Switzerland are more interested in optimizing their work/leisure balance. There is, however, room for alternative models, such as establishing expert pools with older workers from which experts can be extracted as internal consultants or project leaders. More fragmented career models also seem to be very attractive (not only for older workers), enabling a better balance to be struck between working, learning and leisure time. The wide spectrum of possible models is therefore completely open to companies in Switzerland. Not all models are suitable for all industries and corporate activities. Companies should first review all of the options and then select those that best suit their needs. Additional activities include tailoring the models to their needs, implementing suitable retirement models, switching to performance-based wage compensation, and fostering awareness of these new opportunities among employees and managers.

*Implement work time, work place and employment models that support corporate allegiance (Japan):* Japan has to cope with aversion to certain models due to culture-based attitudes. Models must be offered that support the self-confidence of older workers by adequately considering the importance of the sense of belonging, the commitment to a company, corporate integration, etc. Models must therefore be expanded to enable close interaction with the company and, hence, increase the sense of belonging. Employment based on an alternative model should not equate to being excluded from team work, corporate briefings, social events, performance planning, performance assessment, and incentive plans. This inclusion of older workers increases their acceptance and, consequently, the success of the models.

## 9.2 RECOMMENDATIONS TO INCREASE THE PARTICIPATION OF WOMEN

Women's participation is mainly poor due to workplace inflexibility, the widespread role stereotypes in society, especially among employers, and to a lack of self-confidence. Recommendations are therefore designed to tackle stereotypes and to meet women's changing needs during their careers. No recommendations for quotas are formulated



because such measures are clearly rejected by the interviewees. In general, laws and regulations are in place, but need to be enforced emphatically by the government.

**Table 6: Recommendations to increase the female participation rate**

*Recommendations for business leaders in Switzerland and Japan*

- Support the eradication of role stereotype of women
- Adapt working conditions to the father's needs
- Increase awareness among managers of the distinct characteristics of men and women
- Exchange best practices

*Recommendations for business leaders in Switzerland*

- Adapt employment conditions to women's changing needs
- Remove inherent aversion to certain industries (especially to high-tech and financial industries)

*Recommendations for business leaders in Japan*

- Adapt employment conditions to women's changing needs
- Intensify sourcing of skilled female workers by foreign companies

*Recommendations for policy makers in Switzerland and Japan*

- Increase supply of affordable care (to remove "tax" burden)
- Influence perception of women in society

*Recommendations for policy makers in Switzerland*

- Countrywide alignment of school system to fit the demands of working mothers

*Recommendations for policy makers in Japan*

- Eliminate discriminatory practices

Source: Author's design

*Support the eradication of role stereotype of women (Switzerland and Japan):* The role stereotype of women is still strongly present in Japan and has not completely vanished in Switzerland either. Although women are partly responsible for liberating themselves from this assigned role, society must support this process. Companies should contribute by disseminating out alternative female role images. They must clearly communicate their great interest in skilled women. A higher visibility of women in executive positions will slowly eradicate the omnipresent housewife stereotypes. Managers need to be trained on how to act when offering jobs and planning promotion with women, i.e. hesitant behavior by women is not a sign of a lack of interest. Use of these trained managers and successful women for mentoring would certainly help women to overcome the stereotypes and to adapt an alternative, work-centered role. Further, is it the trained managers' duty to encourage women to take responsible jobs during recruitment, performance interviews and at job fairs at universities. This will enhance women's self-confidence and convince them of their ability to successfully assume a position of high responsibility.

*Adapt employment conditions to women's changing needs (Switzerland):* The employment conditions, generally designed for and by a male-dominated economy, have to be adapted to women's highly fragmented careers. Breaks and re-entries must be facilitated by more flexible career models and by measures enabling women to remain tied to the company and up-to-date with respect to new skills. Gender neutrality in promotion has to be implemented, and facilities and work models offered that allow the reconciliation of family and work life.

*Adapt employment conditions to women's changing needs (Japan):* Since male domination is still high in the Japanese business world, the activities outlined for Switzerland are *a fortiori* applicable to Japan.<sup>65</sup> The double track system, the most prominent instrument

<sup>65</sup> However, the ease of implementation is likely to differ in both countries.

to put women off management careers in Japan, must be applied in a gender-neutral manner or be eliminated altogether.

*Intensify sourcing of skilled female workers by foreign companies (Japan):* Skilled, ambitious female workers are often discriminated by Japanese companies due to the double track system. They therefore constitute a rich pool to be exploited by foreign companies to meet their demands. To become attractive, foreign companies have to offer innovative working models. They can often draw from experiences provided by the corporate center in their home country. In addition, native women in top positions demonstrate the company's willingness to promote competent women. The impact of such measures will be even more effective in a country such as Japan, where hierarchy is still of paramount importance.

### 9.3 RECOMMENDATIONS FOR AN OPTIMIZED APPLICATION OF THE IMMIGRATION LEVER

Recommendations for Japan call for radical changes at corporate and country level. Legislation and regulations have to become more transparent and more compatible with other industrialized countries. The country and the companies located there must enhance comparative attractiveness. Recommendations directed to policy makers and business leaders from Switzerland are modest. Most are designed to reduce resistance or negative sentiments.

**Table 7: Recommendations for an optimized application of the immigration lever**

*Recommendations for business leaders in Switzerland*

- Prevent overuse of immigration lever to avoid resistance
- Communicate the merits of immigrants

*Recommendations for business leaders in Japan*

- Internationalize companies with respect to staff, culture and language

*Recommendations for policy makers in Switzerland*

- Change legislation and regulations for immigration from non-EU states
- Create awareness among business leaders of alternatives to immigration
- Maintain the country's attractiveness

*Recommendations for policy makers in Japan*

- Change legislation and regulations for immigration
- Enhance the country's comparative attractiveness for immigrants (workers, students)
- Support cultural openness among native citizens

Source: Author's design

*Prevent overuse of the immigration lever to avoid resistance (Switzerland):* The easy manageability of hiring skilled workers from abroad tempts companies to apply this lever because it substantially increases their chances of finding workers with the exact skills, experience and attributes they seek. Such overuse of the immigration lever could cause increasing resistance in Switzerland. Moreover, the ease of applying this lever may disappear due to the changing comparative attractiveness and similar demographic developments in other countries. Efforts to prepare for such immigration drought must be taken early on, and must primarily include the development of the other levers. Companies must take action to signal that native workers, and especially marginal groups (women and older workers), are given a fair chance to remain in the labor force.

*Internationalize companies with respect to staff, culture and language (Japan):* Japanese interviewees doubt that the attractiveness of companies is sufficient to allure large numbers of skilled immigrants. Implementing a culture to welcome and integrate a large number of

immigrants will be a main task for Japanese business leaders. A stepwise approach reducing fear and promoting trust will slowly initiate this necessary change. First, companies have to foster skills necessary to interact with foreigners. Successful training programs (language skills, behavioral training) which improve managers' communication skills must be made mandatory for promotion. Post-doc years spent abroad should no longer be penalized, but should support promotion. Sabbaticals at universities in foreign countries must be offered to prospective managers. Second, companies must give foreigners (students, consultants, experts from universities) access to them to bring in new ideas, technologies and managerial methods. The companies must offer external students or experts temporary jobs to make interaction with foreigners a daily experience for the entire staff. Third, companies must move away from the local proprietary knowledge and standards implicit in "keiretsu-like systems" and set up more international partnerships. Off-shoring, outsourcing and other collaborations with foreign companies should be seen as opportunities for international interaction and collaboration. These activities will not only prepare companies for benefitting from higher immigration rates – they will also have positive co-operative effects on the productivity lever through diversity-boosted innovation.

*Enhance the countries' comparative attractiveness for immigrants (workers, students) (Japan):* Besides adjusting legislation, Japan has to enhance its comparative attractiveness. The country already seems to be highly attractive with respect to factors such as wage levels, personal security, leisure and lifestyle. However, an important step must be taken to establish a welfare state that treats all people – immigrants and natives – the same. Equal citizenship is necessary, including eligibility to all services of the welfare system, in order to establish a certain sense of belonging for immigrants. Japan has to brush off the stereotype of a country that defends mono-ethnicity and mono-culturalism by all means. This has to be achieved, for instance, by offering positions in public institutions (such as universities, museums, and theaters) to foreign staff.

## 9.4 RECOMMENDATIONS TO INCREASE PRODUCTIVITY

Due to low productivity growth in both countries over the last decade, improving this lever is mandatory not only to cope with workforce scarcity, but also to remain globally competitive. One recommendation, that is not discussed further but that deserves the attention of business leaders and policy makers, concerns the shift of the R&D focus. The money spent should increasingly target R&D activities in sectors which are growing in size and importance in the two economies (such as the service sector).

**Table 8: Recommendations to increase productivity**

<p><i>Recommendations for business leaders in Switzerland and Japan</i></p> <ul style="list-style-type: none"> <li>• Shift R&amp;D focus to more promising sectors with higher return on investment (e.g. service sector)</li> <li>• Concentrate on higher value generating activities</li> </ul>
<p><i>Recommendations for business leaders in Switzerland</i></p> <ul style="list-style-type: none"> <li>• Develop higher risk disposition for cutting-edge technologies</li> <li>• Support education of skilled workers</li> <li>• Develop a motivating corporate culture</li> </ul>
<p><i>Recommendations for business leaders in Japan</i></p> <ul style="list-style-type: none"> <li>• Implement a dual education system</li> <li>• Change corporate culture and exploit human resource potential</li> <li>• Increase internationalization and openness</li> </ul>
<p><i>Recommendations for policy makers in Switzerland and Japan</i></p> <ul style="list-style-type: none"> <li>• Shift R&amp;D focus to more promising sectors with higher return on investment (e.g. service sector)</li> <li>• Support venture capital-driven commercialization of R&amp;D outcomes</li> </ul>
<p><i>Recommendations for policy makers in Switzerland</i></p> <ul style="list-style-type: none"> <li>• Improve macroeconomic factors to increase competition</li> </ul>
<p><i>Recommendations for policy makers in Japan</i></p> <ul style="list-style-type: none"> <li>• Improve macroeconomic factors to enhance knowledge dispersion</li> <li>• Implement a dual education system</li> </ul>

Source: Author's design

*Develop higher risk disposition for cutting-edge technologies (Switzerland):* Switzerland's presuppositions for an innovation-driven productivity growth are outstanding among OECD countries. Nonetheless, money and workforce are generally invested in low-risk projects, where the experience of companies is already high and the drive for innovation remains marginal. This can only be changed by developing a higher risk disposition. Companies and venture capital investors have to intensify contacts with universities that undertake cutting-edge research, securing early access to emerging technologies. If technology fits into their portfolio, companies should establish collaboration for the rapid maturation and adoption of technology. Venture capital investors have to intensify support for the foundation of spin-offs to exploit the most promising technologies emerging from universities. Contracts (for collaboration and spin-offs) have to take into account the fact that the motivation of inventors only remains high if they can reap the fruits of their labor.

*Support education of skilled workers (Switzerland):* Companies should influence and support the education of skilled workers over the entire education and work cycle. The advantages of the dual education system for companies in Switzerland have been shown. Companies should further support this dual education system. Contacts with universities have to be intensified to communicate needs and practice orientation, and to enable research topics of interest to companies to be established. Collaboration, internships and post-doc fellowships can help speed up technology transfer to companies. Companies should also promote the lifelong education of skilled employees to a higher extent either by

internal training or sabbaticals at universities. However, the influence on education must remain balanced by taking into account the interest and remit of the universities to undertake general, basic education and research.

*Change corporate culture and exploit human resource potential (Japan):* Both the interviews and the literature indicate that corporate culture is responsible for low productivity growth, due to the sub-optimal usage of labour. The rigid dual track system must be abolished because it prevents workers from changing career paths, although they may be more productive on when pursuing a different path. Non-regular workers are less motivated and less educated because they are excluded from benefits and vocational training. Application of the status should be minimized or non-regular workers must be included in benefit and educational programs to increase their productivity and to ease the transition from non-regular to regular employment. The strong seniority principle has to be replaced by performance-related promotion and compensation systems to increase the motivation of all workers. Rigid hierarchies and the belief that effective work equates to long working hours have to be weakened because they encourage workers to adopt unproductive behavior.

*Implement a dual education system (Japan):* The implementation of a dual education system may help the country increase productivity in many ways. First, it might smooth the transition from education to work life, reducing youth unemployment, which is high in Japan. Second, it supplies companies with skilled workers trained in practical and theoretical knowledge tailored to the companies' demands. Finally, it reduces the number of students with mediocre performances at universities, simultaneously increasing their level of education and reputation. However, given the high value accorded to university degrees in Japanese society, it will be difficult to successfully implement such a system. Policy makers and business leaders need to push and promote this educational path collaboratively to achieve the level of acceptance needed. The impact of a clear commitment by companies that demonstrate the value of this path should not be underestimated. Company networks to organize the apprentice system and networks of universities of applied science to supply higher education must be established. In parallel, policy makers are called upon to prepare the legal framework required for this implementation.

## 10 CONCLUSION AND OUTLOOK

The objective of this final chapter is to provide a conclusion and an outlook on possible future research. The chapter is structured according to these two main objectives.

### 10.1 CONCLUSION

This thesis presents statistical evidence that, provided the projections hold true, the workforce supply is drying up in both Japan and Switzerland. Attempts to tackle this issue are yet not sophisticated enough to secure their current economic positions.

The thesis makes two important contributions. First, it presents a broadly based analysis of the status quo for the four levers identified to cope effectively with labor force scarcity (participation of older workers and women, immigration and productivity) for both countries. Second, based on the outcome of the analysis, it offers several recommendations to policy makers and business leaders to improve the application of these levers.

The analysis reveals shortcomings in both countries for all levers. However, despite the very similar political and economical orientation, the shortcomings of some levers are of a

different magnitude in the two countries and have different roots. The analysis unambiguously attributes these differences to legal, regulatory, cultural and educational factors, but very often also to stereotypes and prejudices. These uncovered factors lay the foundation for recommended action to improve the efficiency and effectiveness of efforts to avert serious workforce scarcity. Although recommendations are assigned to policy makers and business leaders with regard to who is mainly responsible for them, the discussion reveals that, in most cases, only a joint effort will lead to success. The most important findings for each lever are subsequently summarized very briefly:

*The participation of older workers* is high in Switzerland and Japan compared to other industrialized countries. However, Japan's elderly show a greater propensity to remain in the workforce. This greater willingness can be attributed to both soft (rooted in Japanese culture) and hard factors (e.g. corporate employment models). Switzerland can especially learn from these hard factors.<sup>66</sup> However, both countries need to improve the training of their older cohorts and foster a culture of lifelong learning.

*The participation of women* lags behind male participation in both countries. Prejudices and stereotypes in the business world and society at large still exist, and need to be removed. Switzerland is in a state of transition. However, it may take Japan longer than Switzerland to remove these barriers and to tap into this high potential.

*Immigration* is dealt with differently in the two countries. Switzerland has always embraced this lever. The associated learning process has taught society and companies how to efficiently and effectively integrate immigrant workers. However, Switzerland needs to be careful not to fall prey to overusing the immigration lever, thereby accelerating its erosion and neglecting the other options. Japan and the companies located there have not yet embraced this option. On the one hand, a large and hitherto untapped pool of potential labor can be exploited. On the other hand, a sudden change of this practice is almost impossible to bring about. A step-by-step approach that gradually increases cultural exchange could help reduce fears and increase trust. This would prepare the country for making use of this lever.

*Productivity* in both countries is already at a high level. However, the low growth rates of the last decade may jeopardize these countries' lead. The decreasing number of available workforce makes productivity growth even more urgent. Key areas offering opportunities for improvement exist in both countries: accumulation of brain power in companies and the country in general through education; R&D activities in higher risk and higher benefit sectors and technologies; quicker exploitation of upcoming cutting-edge technologies; development and strengthening of venture capital.

## 10.2 OUTLOOK

Recent events, such as the earthquake in Japan, the euro crisis, and the subsequent economic slowdown, may have reduced the thirst for skilled workers and, consequently, the awareness of demographic change. Nevertheless, demand-driven fluctuations for skilled labor cannot hide the fact that potential growth is endangered in both countries if steps are not taken early enough to cope with the phenomenon of a shrinking and ageing workforce.

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<sup>66</sup> The author is convinced that it would be pertinent to learn from the soft factors (e.g. strong link between quality of life and work and higher appreciation of experience and age). Nevertheless, these cultural changes would require a much longer incubation period.

While answering the research question, this thesis offers several interesting starting points for future research.

The present research is strongly driven by the interviewees' statements. Given the substantially large cultural differences between the two countries, it could be assumed that the conclusions derived from these statements may be somewhat biased by the western perspective of the interviewer. Furthermore, the interview sample of Swiss companies was larger than that of Japanese firms. Additional value could therefore be generated by an analogous study performed by a Japanese student, who would have better access to Japanese companies and could interpret the statements based on a different cultural background.

The recommendation tables indicate the existence of co-operative effects. Such interrelations deserve additional attention. The (positive or negative) direction and the degree of mutual reinforcement help to shed light on the most efficient measures to be implemented.

The present approach based on interviews with experts and managers does not allow for the quantification of each lever's impact. Quantification enables the extent to which improvements in certain levers offset deficits in others to be estimated. This would be particularly desirable in view of a relaxation of the immigration lever, where Japan is faced with a traditionally high and Switzerland with a steadily growing aversion to immigration.

This thesis focused primarily on large international companies. The high number and importance of SMEs in Switzerland and Japan, however, call for additional research to be undertaken at SME level, since they probably find it even more difficult to quench their thirst for skilled workers than internationally recognized and well-known companies. Given these greater difficulties, scrutinizing the topic at SME level may unearth innovative approaches that can then also be adapted by larger companies.

## 11 BIBLIOGRAPHY

- Abe, Y. (2011). The equal employment opportunity law and labor force behavior in Japan. *Journal of Japanese International Economies*, 25(1), 39–55.
- Akaha, T. (2008). *Immigration in Japan*. Retrieved from [http://www.wiscnetwork.org/ljubljana2008/papers/WISC\\_2008-430.pdf](http://www.wiscnetwork.org/ljubljana2008/papers/WISC_2008-430.pdf)
- Arvanitis, S., & Sturm, J.-E. (2008). Innovation and labour productivity in Switzerland: an analysis based on firm level data. In J. Dupont & P. A. Sollberger (Eds.), *Productivity measurement and analysis* (pp. 101–111). Paris: OECD.
- Asao, Y. (2011) Overview of non-regular employment in Japan. In The Japan Institut for Labour Policy and Training (Ed.), *Non-regular employment - issues and challenges common to the major developed countries* (pp 1–42). Tokyo: The Japan Institut for Labour Policy and Training.
- Avenir Suisse. (2006). *Demographie: was uns morgen erwartet*. Zürich.
- Babcock, L., Laschever, S., Gelfand, M., & Small, D. (2003). Nice girls don't ask. *Harvard Business Review*, 81(10), 14–16. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=10986012&site=eds-live&authtype=ip,uid>
- Bader, V. (2005). The Ethics of Immigration. *Constellations: An International Journal of Critical & Democratic Theory*, 12(3), 331–361. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=poh&AN=18515443&site=ehost-live>
- Baldassarini, A., & Di Veroli, N. (2008). Labor input productivity. Comparative measures and quality issues. In J. Dupont & P. A. Sollberger (Eds.), *Productivity measurement and analysis* (pp. 239–258). Paris: OECD.
- Blinder, A. S. (2006). Offshoring: the next industrial revolution? *Foreign Affairs*, 85(2), 113–128.
- Bloom, D. E., & Canning, D. (2008). Global demographic change: dimensions and economic significance. *Population and Development review*, 34, 17–51. Retrieved from <http://www.jstor.org/stable/25434758>
- Bolzen, S. (2011, May 13). Europa rudert bei der Reisefreiheit zurück. *Die Welt*. Retrieved from [http://www.welt.de/print/die\\_welt/politik/article13369269/Europa-rudert-bei-der-Reisefreiheit-zurueck.html](http://www.welt.de/print/die_welt/politik/article13369269/Europa-rudert-bei-der-Reisefreiheit-zurueck.html)
- Borjas, G. J. (1994). The economics of immigration. *Journal of Economic Literature*, 32(4), 1667–1717. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=9501041458&site=ehost-live>
- Bruch, H., Kunze, F., & Böhm, S. (2010). *Generationen erfolgreich führen: Konzepte und Praxiserfahrungen zum Management des demographischen Wandels* (1st ed.). Wiesbaden: Gabler.
- Brynjolfson, E., Hitt, L. M., Yang, S., Baily, M. N., & Hall, R. E. (2002). Intangible assets: computers and organizational capital. *Brookings Papers on Economic Activity*, (1), 137–181.
- Brynjolfsson, E., & Hitt, L. M. (2003). Computing productivity: firm-level evidence. *Review of Economics & Statistics*, 85(4), 793–808. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=11585753&site=ehost-live>
- Bundesamt für Statistik. (2009). *Demografisches Porträt der Schweiz*. Neuchâtel: Bundesamt für Statistik.



- Bundesamt für Statistik. (2010a). *Arbeitsmarktindikatoren 2010: Kommentierte Ergebnisse für die Periode 2004-2010*. Neuchâtel: Bundesamt für Statistik.
- Bundesamt für Statistik. (2010b). *STAT-TAB: Die interaktive Statistikdatenbank: Zukünftige Bevölkerungsentwicklung nach Alter, Geschlecht, Nationalität, Jahr und gemäss einem Szenario oder Variante*. Neuchâtel: Bundesamt für Statistik.
- Bundesamt für Statistik. (2010c). *Szenarien zur Bevölkerungsentwicklung der Schweiz: 2010-2060*. Neuchâtel: Bundesamt für Statistik.
- Bundesamt für Statistik. (2011a). *Bevölkerungsstand und -struktur Detaillierte Daten: Historische Übersicht*. Neuchâtel: Bundesamt für Statistik.
- Bundesamt für Statistik. (2011b). *Statistik der natürlichen Bevölkerungsbewegung 2010: Geburten, Eheschliessungen und Scheidungen im Trend*. Medienmitteilung. Neuchâtel: Bundesamt für Statistik. Retrieved from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/01/new.html?gnpID=2011-562>
- Bundesgesetz über Finanzhilfen für familienergänzende Kinderbetreuung, Bundesversammlung der Schweizerischen Eidgenossenschaft 4.10.2002.
- Burkhauser, R. V., & Rovba, L. (2009). Institutional and individual responses to structural lag. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape* (pp. 9–34). Baltimore: Johns Hopkins University Press.
- Bütler, M. (2009). Switzerland: high replacement rates and generous subsistence as a barrier to work in old age. *The Geneva Papers on Risk and Insurance Issues and Practice*, 34(4), 561–577. doi:10.1057/gpp.2009.19
- Cappelli, P. (2009). Trends in job demands and the implications for older workers. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape*. (pp. 107–125). Baltimore: Johns Hopkins University Press.
- Casey, B. H. (2005). The employment of older people: can we learn from Japan? *The Geneva Papers*, 30, 620–637.
- Cassidy, A. (2011, July 15). Wirtschaft kämpft um Spezialisten: Bund soll bei Kontingenten für ausländische Fachkräfte flexibler werden. *Basler Zeitung*, p. 1.
- Cette, G., Kocoglu, Y., & Mairesse, J. (2009). Comparing labour and total factor productivity growth and level in France, Japan, the United Kingdom and the United States over the past century and in recent years. *The Open Economics Journal*, 2, 45–60. Retrieved from <http://www.benthamschance.com/open/toeconsj/openaccess2.htm>
- Clark, R., Ogawa, N., Kondo, M., & Matsukura, R. (2010). Population decline, labor force stability, and the future of the Japanese economy. *European Journal of Population/Revue européenne de Démographie*, 26(2), 207–227. doi:10.1007/s10680-009-9179-9
- Coulmas, F. (Ed.). (2008). *The demographic challenge: A handbook about Japan*. Leiden; Boston: Brill.
- Crepaz, M. M. L., & Damron, R. (2008). Constructing tolerance: how the welfare state shapes attitudes about immigrants. *Comparative Political Studies*, 42(3), 437–463. doi:10.1177/0010414008325576
- Cutler, D., Deaton, A., & Lleras-Muney, A. (2006). The Determinants of Mortality. *The Journal of Economic Perspectives*, 20(3), 97–120. Retrieved from <http://www.jstor.org/stable/30033668>
- Czaja, S. J., & Sharit, J. (2009). Telework and older workers. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape* (pp. 126–143). Baltimore: Johns Hopkins University Press.

- Daum, T., & Löpfe, P. (2011, April 10). Wo sind die Grenzen? Nicht nur die SVP, auch Umweltschützer kritisieren die starke Einwanderung hoch qualifizierter Arbeitskräfte. Schadet die Zuwanderung der Schweiz? Oder beschert sie ihr vor allem Vorteile? Eine Debatte. *Sonntags Zeitung*, pp. 15–19.
- D'Costa, A. P. (2008). The Barbarians are here. *Asian Population Studies*, 4(3), 311–329. doi:10.1080/17441730802496524
- Dorn, D., & Sousa-Poza, A. (2003). Why is the employment rate of older Swiss so high? An analysis of the social security system. *Geneva Papers on Risk and Insurance - Issues and Practice*, 28(4), 652–672. doi:10.1111/1468-0440.00252
- Duval, R. (2003). *Retirement behavior in OECD countries: impact of old age pension schemes and other social transfer programs* (OECD Journal: Economic Studies No 37). Retrieved from [www.oecd.org/dataoecd/12/23/34561950.pdf](http://www.oecd.org/dataoecd/12/23/34561950.pdf)
- Eberstadt, N., & Groth, H. (2007). *Europe's coming demographic challenge: unlocking the value of health*. Washington, D.C, Blue Ridge Summit, PA: AEI Press; Distributed to the trade by National Book Network.
- Eidgenössisches Volkswirtschaftsdepartement [EVD]. (2011). *Fachkräfte für die Schweiz: Eine Initiative des Eidgenössischen Volkswirtschaftsdepartements*. Bern. Retrieved from <http://www.news.admin.ch/NSBSubscriber/message/attachments/24188.pdf>
- Ernst & Young. (2003). *Venture capital: tax advantages for venture capital in Switzerland*. Retrieved from [http://www2.eycom.ch/publications/items/tax\\_fs\\_venturecapital/en.pdf](http://www2.eycom.ch/publications/items/tax_fs_venturecapital/en.pdf)
- Euwals, R., Knoef, M., & Vuuren, D. (2011). The trend in female labour force participation: what can be expected for the future? *Empirical Economics*, 40(3), 729–753. doi:10.1007/s00181-010-0364-9
- Federal Office for Gender Equality [FOGE]. (2008). Dritter Bericht der Schweiz über die Umsetzung des Übereinkommens zur Beseitigung jeder Form von Diskriminierung der Frau (CEDAW). Retrieved from <http://www.ebg.admin.ch/dokumentation/00012/00198/index.html?lang=de>
- Fernández, R. (2007). Alfred Marshall lecture women, work, and culture. *Journal of the European Economic Association*, 5(2/3), 305–332. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=25480277&site=ehost-live>
- Ferro-Luzzi, G., & Sonnet, A. (2003). Arbeit nach dem 50. Altersjahr: Die Schweiz im internationalen Vergleich. *Die Volkswirtschaft: das Magazin für Wirtschaftspolitik*, 76(8), 4–9.
- Forbes. (2010). *Japan's Population Problem: Low fertility rates and longer life spans are leading to an older and smaller population*. Retrieved from <http://www.forbes.com/2010/06/14/japan-population-aging-business-oxford-analytica.html>
- Fortin, N. M. (2009). Gender role attitudes and women's labor market participation: opting - out, AIDS, and the persistent appeal of housewifery. Retrieved from [www.econ.yale.edu/seminars/labor/lap08/fortin-081121.pdf](http://www.econ.yale.edu/seminars/labor/lap08/fortin-081121.pdf)
- Füglister, P. (1994). Hilfe! Die Schweiz schrumpft: Die demographische Entwicklung in der Schweiz und ihre Folgen. Zürich: Orell Füssli.
- Fujimoto, K. (2010). The organizational practice of gendered employment: disparate impact and gender segregation in the Japanese entry-level labor market. *Sociological Focus*, 43(2), 88–108. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=51487546&site=ehost-live>
- Fukao, K. (2010). *Service sector productivity in Japan: the key to future economic growth*. Retrieved from [www.rieti.go.jp/jp/publications/pdp/10p007.pdf](http://www.rieti.go.jp/jp/publications/pdp/10p007.pdf)

- Furrer, M. (2011, May 24). Die Zuwanderung mobilisiert Rechte und Linke: Schweizer Demokraten, die Umweltorganisation Ecopop, SP und Grüne sehen Probleme. *Basler Zeitung*, p. 2.
- Garon, S. (2010). State and family in modern Japan: a historical perspective. *Economy and Society*, 39(3), 317–331. doi:10.1080/03085147.2010.486214
- Gärtner, M. (2006). *Macroeconomics* (2<sup>nd</sup> edition). Harlow, England; New York: FT Prentice Hall.
- Genre, V., Salvador, R. G., & Lamo, A. (2010). European women: why do(n't) they work? *Applied Economics*, 42(12), 1499–1514. doi:10.1080/00036840701721547
- Givens, T. E. (2004). The radical right gender gap. *Comparative Political Studies*, 37(1), 30–54. doi:10.1177/0010414003260124
- Golder, M. (2003). Explaining variation in the success of extreme right parties in Western Europe. *Comparative Political Studies*, 36(4), 432–466. doi:10.1177/0010414003251176
- Gordon, R. J. (2003). Exploding productivity growth: context, causes, and implications. *Brookings Papers on Economic Activity*, (2), 207–298. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=12347935&site=ehost-live>
- Gross, D. M. (2006). *Immigration policy and foreign population in Switzerland*. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=ecn&AN=0821469&site=ehost-live>
- Gross, S. (2011, August 15). Linke Fürchten ums bürgerliche Bildungsideal: Die Konzentration von Forschung und Bildung im Volkswirtschaftsdepartement stösst in der Romandie auf Kritik. *Basler Zeitung*, p.5.
- Guellec, D. (2006). *Productivity growth and innovation in Switzerland – An international perspective*. Retrieved from <http://www.oecd.org/dataoecd/21/22/37528514.pdf>
- Haghirian, P. (2009). Japanese women in international management. *Economy, Culture & History Japan Spotlight*, 28(5).
- Hairault, J.-O., Sopraseuth, T., & Langot, F. (2010). Distance to retirement and older workers' employment: the case for delaying the retirement age. *Journal of the European Economic Association*, 8(5), 1034–1076. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=52544423&site=ehost-live>
- Hara, N., & Ichiue, H. (2011). Real-time analysis on Japan's labor productivity. *Journal of the Japanese and International Economies*, 25(2), 107–130. doi:10.1016/j.jjie.2011.03.001
- Haub, C. (2010). *Japan's demographic future*. Retrieved from <http://www.prb.org/Articles/2010/japandemography.aspx>
- Heilman, M. E. (2001). Description and prescription: how gender stereotypes prevent women's ascent up the organizational ladder. *Journal of Social Issues*, 57(4), 657–674. doi:10.1111/0022-4537.00234
- Higo, M. (2006). Aging workforce in Japan: three policy dilemmas. *Hallym International Journal of Aging*, 8(2), 149–173.
- Hirao, K. (2001). The effect of higher education on the rate of labor-force exit for married Japanese women. *International Journal of Comparative Sociology*, 42(5), 413–433. doi:10.1177/002071520104200501
- Holtug, N. (2010). Immigration and the politics of social cohesion. *Ethnicities*, 10(4), 435–451.

- Höpflinger, F. (2007). Generationenwandel auf dem Arbeitsmarkt und in Unternehmen. *Die Volkswirtschaft*, 80(7).
- Human resources. (2010). *Country Commerce. Switzerland*, 36–52. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=56091487&site=ehost-live>
- Hwang, D. (2010). *Ranking the nations on nanotech*. Retrieved from <http://www.electroiq.com/articles/stm/2010/08/ranking-the-nations.html>
- JETRO. (2007). *Japan moves to improve efficiency of service sector*. Retrieved from [www.jetro.go.jp/en/reports/survey/pdf/2007\\_07\\_biz.pdf](http://www.jetro.go.jp/en/reports/survey/pdf/2007_07_biz.pdf)
- Johnson, R. W. (2009). Managers' attitudes toward older workers: a review of the evidence. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape* (pp. 185–208). Baltimore: Johns Hopkins University Press.
- Jones, R., & Yokoyama, T. (2006). *OECD Economics Department Working Papers* (Vol. 527).
- Jordan, J. (2006). Mothers, wives, and workers: explaining gendered dimensions of the welfare state. *Comparative Political Studies*, 39(9), 1109–1132. doi:10.1177/0010414005284215
- Jorgenson, D. (2008, November). *Projecting world economic growth*. Symposium on the outlook of future productivity growth, San Francisco. Retrieved from [www.frbsf.org/csip/research/symposium200811.pdf](http://www.frbsf.org/csip/research/symposium200811.pdf)
- Jorgenson, D. W., & Vu, K. M. (2011). The rise of developing Asia and the new economic order. *Journal of Policy Modeling*, 33(5), 698–716. doi:10.1016/j.jpolmod.2011.06.004
- Kaneko, R. (2008). Statistical foundations of population projections. In F. Coulmas (Ed.), *The demographic challenge. A handbook about Japan* (pp. 41–59). Leiden ; Boston: Brill.
- Kaneko, R., Ishikawa, A., Ishii, F., Sasai, T., Iwasawa, M., Mita, F., & Moriizumi, R. (2008). Population projections for Japan: 2006-2055 outline of results, methods, and assumptions. *The Japanese Journal of Population*, 6(1), 76–114.
- Kawata, H. & Naganuma, S. (2010). Labor force participation rate in Japan. Bank of Japan Review.
- Killias, M. (2009). Paradise lost? New trends in crime and migration in Switzerland. *Sociology of Crime, Law & Deviance*, 13, 33–45. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=39748568&site=ehost-live>
- Kingston, J. (2010). *Contemporary Japan: A history since*. Chichester: Blackwell.
- Kluge, A. (2006). Die Einstellung zur Leistung-, Lern- und Anpassungsfähigkeit älterer Arbeitnehmer/-innen und die subjektiv erlebte Diskriminierung - eine Untersuchung in Schweizer Unternehmen. *Arbeit*, 15(1), 3–17.
- Krings, F., Sczesny, S., & Kluge, A. (2011). Stereotypical inferences as mediators of age discrimination: the role of competence and warmth. *British Journal of Management*, 22(2), 187–201. doi:10.1111/j.1467-8551.2010.00721.x
- Krings, F., Tschan, F., & Bettex, S. (2007). Determinants of attitudes toward affirmative action in a Swiss sample. *Journal of Business and Psychology*, 21(4), 585–611.
- Kühni, O. (2011). *Kaum ein Schweizer Unternehmen setzt auf die Frauenquote*. Retrieved from <http://www.tagesanzeiger.ch/wirtschaft/unternehmen-und-konjunktur/Kaum-ein-Schweizer-Unternehmen-setzt-auf-die-Frauenquote/story/23271439>
- Kumagai, F., & Kato, A. (2007). Factors facilitating Japanese married women entering the labour force. *Current Sociology*, 55(4), 561–577. doi:10.1177/0011392107077639

- Kunisch, S., Boehm, S. A., & Boppel, M. (2011). *From grey to silver: managing the demographic change successfully*. Heidelberg ; New York: Springer-Verlag Berlin Heidelberg.
- Kunze, F. (2010). Dealing with the demographic change in companies. Potential impacts and intervention strategies for an aging workforce (Dissertation). HSG, St. Gallen.
- Kyyrä, T., & Wilke, R. A. (2007). Reduction in the long-term unemployment of the elderly: a success story from Finland. *Journal of the European Economic Association*, 5(1), 154–182. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=24400580&site=ehost-live>
- Lavenex, S. (2004). Whither the liberal democratic model? Immigration politics in Switzerland and Japan. *Swiss Political Science Review*, 10(3), 179–209. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=ecn&AN=0755623&site=ehost-live>
- Lay, G., Kinkel, S., Jäger, A., Hanisch, C., & Waser, B. R. (2009). *Benchmarking identifiziert Potenziale zur Steigerung der Produktivität*. Retrieved from [www.produktionsinnovation.ch/pi\\_ch-info-benchmark\\_final.pdf](http://www.produktionsinnovation.ch/pi_ch-info-benchmark_final.pdf)
- Loretto, W., & White, P. (2006). Employers' attitudes, practices and policies towards older workers. *Human Resource Management Journal*, 16(3), 313–330. doi:10.1111/j.1748-8583.2006.00013.x
- Losa, F. B., & Origoni, P. (2005). The socio-cultural dimension of women's labour force participation choices in Switzerland. *International Labour Review*, 144(4), 473–494. doi:10.1111/j.1564-913X.2005.tb00578.x
- Loser, P. (2011, May 24). Die Ausländer und wir: Zwei Weltbilder kollidieren bei der Frage nach der "richtigen Zuwanderung". *Basler Zeitung*, p. 2.
- Magnus, G. (2010). The age of aging: how demographics are changing the global economy and our world. Princeton, N.J: Recording for the Blind & Dyslexic.
- Matsukura, R., Ogawa, N., & Clark, R. L. (2007). Analysis of employment patterns and the changing demographic structure of Japan. *Japanese Economy*, 34(1), 82–153. Retrieved from <http://econpapers.repec.org/RePEc:mes:jpneco:v:34:y:2007:i:1:p:82-153>
- McDonald, P. K., Bradley, L. M., & Guthrie, D. (2005). Good mothers, bad mothers: exploring the relationship between attitudes towards nonmaternal childcare and mother's labour force participation. *Journal of Family Studies*, 11(1), 62–82. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=17541957&site=ehost-live>
- McDonald, P., & Kippen, R. (2001). Labor supply prospects in 16 developed countries, 2000–2050. *Population & Development Review*, 27(1), 1–32. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=4605164&site=ehost-live>
- McFalls, J. A. (2007). Population: a lively introduction. *Population Bulletin* 62(1), 3–31.
- McGrath, M., Driscoll, M., & Gross, M. (2005). Back in the game: returning to business after a hiatus: experiences and recommendations for women, employers, and universities. Retrieved from <http://knowledge.wharton.upenn.edu/papers/1298.pdf>
- Mensch, C. (2011, April 6). Die Schweiz ist voll: Die Organisation Ecopop rührt mit der Initiative "Stopp der Überbevölkerung" an einem Tabu. *Basler Zeitung*, p. 4.
- Montanari, I. (2009). Europe, women, and work: is the "adult worker" ideal achieved. *International Journal of Health Services*, 39(2), 245–269.

- Motohashi, K. (2004). University-industry collaboration and the importance of R&D-focused small and medium-sized enterprises - their implications on Japan's innovation system. Retrieved from <http://www.rieti.go.jp/en/papers/research-review/014.html>
- Motohashi, K. & Muramatsu, S. (2011). *Examining the university industry collaboration policy in Japan: patent analysis*. Retrieved from <http://www.rieti.go.jp/jp/publications/dp/11e008.pdf>
- Nordhaus, W. (2002). Productivity growth and the New Economy. *Brookings Papers on Economic Activity*, (1), 199–220.
- O'Connell, M. (2011). How do high skilled natives view high skilled immigrants? A test of trade theory prediction. *European Journal of Political Economy*, 27(2), 230–240.
- OECD. (2006). *Economic surveys: Switzerland*: OECD Publishing. Retrieved from <http://www.news.admin.ch/NSBSubscriber/message/attachments/1455.pdf>
- OECD. (2007). *Glossary of statistical terms*. Retrieved from <http://stats.oecd.org/glossary/download.asp>
- OECD. (2009). *OECD economic surveys: Switzerland 2009*. Retrieved from [http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-switzerland-2009\\_eco\\_surveys-che-2009-en](http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-switzerland-2009_eco_surveys-che-2009-en)
- OECD. (2011a). *Economic survey of Japan 2011*. Retrieved from [www.oecd.org/dataoecd/5/29/47651425.pdf](http://www.oecd.org/dataoecd/5/29/47651425.pdf)
- OECD. (2011b). *Health status: life expectancy*. Retrieved from <http://stats.oecd.org/index.aspx>
- OECD. (2011c). *OECD productivity statistics*: OECD Publishing.
- OECD. (2011d). *Pensions at a glance 2011: retirement-income systems in OECD and G20 countries*. Retrieved from [http://dx.doi.org/10.1787/pension\\_glance-2011-en](http://dx.doi.org/10.1787/pension_glance-2011-en)
- Ogawa, N., & Matsukura, R. (2005). Aging in Japan: the health and wealth of older persons. In United Nations (Ed.), *United Nations expert group meeting on social and economic implications of changing population age structures* (pp. 199–220).
- Oka, M., & Kimura, T. (2003). Managing an ageing labour force: the interplay between public policies and the firm's logic of action - the case of Japan. *Geneva Papers on Risk and Insurance - Issues and Practice*, 28(4), 596–611. doi:10.1111/1468-0440.00248
- Oliner, S. D., Sichel, D. E., & Stiroh, K. J. (2007). Explaining a productive decade. *Brookings Papers on Economic Activity*, (1), 81–137.
- O'Rourke, K. H., & Sinnott, R. (2006). The determinants of individual attitudes towards immigration. *European Journal of Political Economy*, 22(4), 838–861.
- Rafi, R. (2011, July 24). Nun wendet sich auch die CVP von der EU ab: Die Partei lehnt in ihrem neuen Grundsatzpapier erstmals den Beitritt zur Europäischen Union ab und will die Personenfreizügigkeit einschränken. *Sonntags Zeitung*, p. 5.
- Rauner, F. (2004). Reform der Berufsbildung: Expertise im Auftrag des Ministeriums für Arbeit u. Soziales, Qualifikation und Technologie Nordrhein-Westfalen. Retrieved from [http://www.itb.uni-bremen.de/downloads/Publikationen/expertise\\_nrw.pdf](http://www.itb.uni-bremen.de/downloads/Publikationen/expertise_nrw.pdf)
- Raymo, J. M., & Lim, S.-J. (2011). A new look at married women's labor force transitions in Japan. *Social Science Research*, 40(2), 460–472.
- Reiman, K. E. (2006). *Demografische Projektionen*. Retrieved from [www.goetschi.li/pics/art/Research\\_Focus\\_April\\_DEU.pdf](http://www.goetschi.li/pics/art/Research_Focus_April_DEU.pdf)
- Ridell, M. (2011, July 18). Labour's anti-immigration guru. *The Telegraph*. Retrieved from <http://www.telegraph.co.uk/comment/columnists/maryriddell/8644334/Labours-anti-immigration-guru.html>

- Rudolf, B., & Zurlinden, M. (2010). Productivity and economic growth in Switzerland 1991-2006. *Schweizerische Zeitschrift für Volkswirtschaft und Statistik/Swiss Journal of Economics and Statistics*, 146(3), 577–600. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=ecn&AN=1153770&site=ehost-live>
- Sabeen, Z. (2007). Hiring women workforce: considerations of employers. *International Review of Business Research Papers*, 3(4), 460–472. Retrieved from <http://www.bizresearchpapers.com/Sabeen.pdf>
- Sanders, M. J., & McCready, J. W. (2010). Does work contribute to successful aging outcomes in older workers? *The International Journal of Aging and Human Development*, 71(3), 209–229.
- Sanderson, W. C. & Scherbov, S. (2010). Pre-measuring aging, *Science*, 329 (No 5997), 1287–1288.
- Sasaki, M. (2002). The causal effect of family structure on labor force participation among Japanese married women. *Journal of Human Resources*, 37(2), 429–440. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=6534974&site=ehost-live>
- Schulz, R., & Martire, L. M. (2009). Caregiving and employment. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape* (pp. 35–50). Baltimore: Johns Hopkins University Press.
- Schweizerische Depeschen Agentur (2011, May 25). Travail.Suisse widerspricht der SVP: Nicht zu viele, sondern zu wenige Einwanderer seien ein Problem, sagt die Gewerkschaft. *Basler Zeitung*, p. 5.
- Schweizerischer Arbeitgeberverband. (2006). *Altersstrategie*. Retrieved from [www.arbeitgeber.ch/files/Dossier/Arbeit%20und%20Alter.pdf](http://www.arbeitgeber.ch/files/Dossier/Arbeit%20und%20Alter.pdf)
- Schweizerischer Arbeitgeberverband. (2011). *Einheitliche Bildungsziele für die Schweizer Schulen*. Retrieved from [http://www.arbeitgeber.ch/index.php?option=com\\_content&view=article&id=1284%3Aerst-mals-einheitliche-bildungsziele-fuer-schweizer-schulen&catid=2%3Anews&Itemid=20&lang=de](http://www.arbeitgeber.ch/index.php?option=com_content&view=article&id=1284%3Aerst-mals-einheitliche-bildungsziele-fuer-schweizer-schulen&catid=2%3Anews&Itemid=20&lang=de)
- Segal, U. A., Mayadas, N. S., & Elliott, D. (2006). A framework for immigration. *Journal of Immigrant & Refugee Studies*, 4(1), 3–24. doi:10.1300/J500v04n01\_02
- Shikama, A. (2005). Japan as a host country: attitudes toward migrants. *International Journal of the Sociology of Language*, 2005(175-176), 179–191. doi:10.1515/ijsl.2005.2005.175-176.179
- Shin, H. (2010). Colonial legacy of ethno-racial inequality in Japan. *Theory and Society*, 39(3-4), 327–342. doi:10.1007/s11186-010-9107-3
- Shinohara, C. (2008). Global pressure, local results: the impact of CEDAW on working women in Japan. *Journal of Workplace Rights*, 13(4), 449–471. doi:10.2190/WR.13.4.f
- Simon, R. J., & Sikich, K. W. (2007). Public attitudes toward immigrants and immigration policies across seven nations. *International Migration Review*, 41(4), 956–962. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=27274098&site=ehost-live>
- Skenderovic, D. (2007). Immigration and the radical right in Switzerland: ideology, discourse and opportunities. *Patterns of Prejudice*, 41(2), 155–176. doi:10.1080/00313220701265528

- Sousa-Poza, A., Schmid, H., & Widmer, R. (2001). The allocation and value of time assigned to housework and child-care: an analysis for Switzerland. *Journal of Population Economics*, 14(4), 599–618. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=5806754&site=ehost-live>
- Stähli, M. E., Le Goff, J.-M., Levy, R., & Widmer, E. (2009). Wishes or constraints? Mothers' labour force participation and its motivation in Switzerland. *European Sociological Review*, 25(3), 333–348. doi:10.1093/esr/jcn052
- Statistics Bureau. (2010). *Statistical Handbook of Japan 2010*. Retrieved from <http://www.stat.go.jp/english/data/handbook/index.htm>
- Statistics Bureau. (2011a). *Japan Statistical Yearbook 2011*. Tokyo: Japan Statistical Association. Retrieved from <http://www.stat.go.jp/english/data/nenkan/index.htm>
- Statistics Bureau. (2011b). *Labor force Survey: Historical Data*. Tokyo: Japan Statistical Association. Retrieved from <http://www.stat.go.jp/english/data/roudou/lnindex.htm>
- Stitzler, S. (2011, February 21). Warum Frauen zu Hause freiwillig vermausern: Bascha Mika wettet in Ihrer Streitschrift gegen "Die Feigheit der Frauen". *Basler Zeitung*, pp. 35–36.
- Straubhaar, T., & Werner, H. (2003). Arbeitsmarkt Schweiz - Ein Erfolgsmodell? *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung*, 36(1). Retrieved from <http://www.iab.de/197/section.aspx/Jahrgang/2003>
- Swiss Federal Statistical Office. (2011). *Bevölkerung: Panorama 01*. Retrieved from <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/01/pan.html>
- Syed, M. & Lee, J. (2010). *Japan's quest for growth: exploring the role of capital and innovation*. Retrieved from [www.imf.org/external/pubs/ft/wp/2010/wp10294.pdf](http://www.imf.org/external/pubs/ft/wp/2010/wp10294.pdf)
- Tai, E. (2009). Japanese immigration policy at a turning point. *Asian & Pacific Migration Journal*, 18(3), 315–344. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=45078370&site=ehost-live>
- Tauzin, D. (2010). Super potential power: new leaders of a new Japan. *Economy, Culture & History Japan Spotlight*, 29(May/June).
- The conference Board. (2011). Total economy database and 2011 productivity brief: productivity, employment and growth in the world's economies findings and graphs for 10 economies. Retrieved from <http://www.conference-board.org/data/economydatabase/>
- The Economist. (2011). Leaders: Asia's lonely hearts. *The Economist*, 400(8747), 9.
- The World Bank. (2010). *Women, business and the law: measuring legal gender parity for entrepreneurs and workers in 128 economies*. Retrieved from <C:/Users/Jonas%20Huber/AppData/Local/Temp/wbl.worldbank.org/documents/Women-Business-Law-summary.pdf>
- Tischhauser, P. (2011, May 22). Es fehlen bald 400000 Arbeitskräfte: Ohne erhöhte Zuwanderung aus Drittstaaten funktionieren 2030 zahlreiche Dienste in der Schweiz nicht mehr. *Sonntags Zeitung*, p. 9.
- Tischhauser, P., & Rafi, R. (2011, July 24). SVP-Initiative zielt auch auf Asylbewerber: "Initiative gegen Masseneinwanderung": Freizügigkeit soll innert dreier Jahre neu verhandelt werden. *Sonntags Zeitung*, p. 7.
- Torres-Gil, F. M. (2009). The politics of work and aging: public policy for the new elders. In S. J. Czaja & J. Sharit (Eds.), *Aging and work: issues and implications in a changing landscape* (pp. 77–89). Baltimore: Johns Hopkins University Press.
- United Nations. (2001). *World population ageing: 1950-2050*. New York: United Nations publications.



- United Nations. (2011a). *Life expectancy (at birth): definition from the UN data glossary*. Retrieved from <http://data.un.org/Glossary.aspx?q=life>
- United Nations. (2011b). *Total fertility rate: definition from the UN data glossary*. Retrieved from <http://data.un.org/Glossary.aspx?q=total+fertility+rate>
- United Nations. (2011c). United Nations press release: world population to reach 10 billion by 2100 if fertility in all countries converges to replacement level.
- United Nations. (2011d). *World population prospects: the 2010 revision*. Retrieved from <http://esa.un.org/unpd/wpp/unpp/p2k0data.asp>
- Uslaner, E. M. (2010). Segregation, mistrust and minorities. *Ethnicities*, 10(4), 415–434.
- VentureCapital. (2011). „Die Schweiz braucht einen staatlichen Seed-Fonds!“. Interview mit Dr. Christian Wenger und Jean-Pierre Vuilleumier, CTI Invest. *VentureCapital*, (Sonderbeilage "Private Equity-Markt Schweiz"), 14–15. Retrieved from [http://www.wiso-net.de/webcgi?START=A60&DOKV\\_DB=ZECO&DOKV\\_NO=VEC8351949BDA658625BA1442347A7E306B&DOKV\\_HS=0&PP=1](http://www.wiso-net.de/webcgi?START=A60&DOKV_DB=ZECO&DOKV_NO=VEC8351949BDA658625BA1442347A7E306B&DOKV_HS=0&PP=1)
- Vogt, G. (2008). *Bevölkerungsentwicklung in Japan: Fokus Migration*. Retrieved from <http://www.berlin-institut.org/online-handbuchdemografie/bevoelkerungsdynamik/regionale-dynamik/japan-fokus-migration.html>
- Weathers, C. (2006). Equal opportunity for Japanese women: what progress? *Japanese Economy*, 33(4), 16–44. doi:10.2753/JES1097-203X330402
- Wilmoth, J. R. (2011). Increase of human longevity: past, present and future. *The Japanese Journal of Population*, 9(1), 155–161.
- Yamada, A. (2010). Labor force participation rates of older workers in Japan. *Japanese Economy*, 37(1), 3–39. doi:10.2753/JES1097-203X370101
- Zulauf, D. (2011, May 31). Dringend gesucht: Uhrmacher. *Basler Zeitung*, p. 11.

## 12 APPENDIX

## Appendix 1: List of interviewees

Title	First Name	Family Name	Position
Mr.	Christian	Ammann	Senior Manager Head of Industrial Relations Swiss International Airlines
Ms.	Marie-Thérèse	Burkart-Arnoso	HR Director (Nestlé)
Mr.	Urs	Bürli	Human Resources Head HR Special Services Region Switzerland (UBS)
Prof. Dr.	David	Chiavacci	Mercator Professor in Social Science of Japan University of Zurich
Prof. Dr.	Robert	Clark	Professor at the University of North Carolina
Ms.	Ruth	Derrer Balladore	President Swiss Employers' Association
Mr.	Werner	Enz	Journalist NZZ
Ms.	Stefanie	Escher	HR (SBB)
Dr.	Martin	Flügel	President Travail.Suisse
Mr.	Jean Claude	Froidevaux	Independent Advisor with 40 years of Japan experience
Mr.	Gregory	Glanzmann	President Arushi GmbH
Dr.	Valerie	Guertler	Head Diversity & Inclusion Switzerland Novartis Pharma AG
Mr.	André	Herger	Manager HR Services at IBM Schweiz
Mr.	Yoshihiko	Hisada	Adecco Country Human Resources Director (Japan)
Mr.	Jason	Hoffe	Group Country Management and external affairs (Novartis)
Mr.	Emmanuel	Jimenez	Director, Human Development, East Asia and Pacific Region and Editor, World Bank Research Observer (World Bank)
Mr.	Hanspeter	Kappeler	CEO Kappeler Management Services
Dr.	Florian	Kohlbacher	Head of Business and Economics Section at the German Institute for Japanese Studies
Mr.	Sascha	Kuster	Federal Department of Economic Affairs FDEA
Mr.	Peter	Luginbühl	Human Resources Schweizerische Bundesbahn (SBB)
Mr.	Richard	Meyer	Head HR V-Zug
Prof. Dr.	Rudolf	Minsch	Member of the Executive Board Economiesuisse
Mr.	Noboru	Okabe	General Manager for Japan Swiss International Airlines
Mr.	Andreas	Renfer	Management and Technology Consultant
Ms.	Christine	Renz	Head of Attraction, Sourcing & Hiring, Basel (Roche)
Mr.	Felix	Rosenberger	Senior Advisor East Asia at Seco
Prof. Dr.	Claude	Siegenthaler	Associate Professor with tenure, Hosei University Tokyo
Mr.	Markus	Städeli	Journalist NZZ
Mr.	Jürg	Stahl	National Council and Member of the Management (Group Mutuel)
Dr.	Frank	Staubli	Managing Director (Gendata)
Mr.	Takafumi	Suzuki	First Secretary Embassy of Japan
Mr.	Bernhard	Weber	State Secretariat for Economic Affairs (SECO)
Mr.	Heinrich	Wegmann	President Swiss-Japanese Chamber of Commerce
Mr.	Yasukazu	Yamazaki	HR Planning Director, Pfizer Japan Inc.
Mr.	Roger	Zbinden	Head Swiss Business Hub
Ms.	Patricia	Zenger	HR Business Development Consultant IBM

## Appendix 2: Introduction to the interview flow diagram

The goal of the interview is to obtain a personal opinion from the respondent on the problem of workforce scarcity as a consequence of demographic change and on possible action options to cope with this challenge. It is necessary to give respondents a predefined structure to cover the main topics without biasing their responses. In this respect, the interview flow diagram can only represent an orientation that has to be adapted to the answers given by the interviewees. The general guideline is to enter into a topic with very general questions and to dig deeper into the matter with more specific questions.

The interview starts with a short sequence of information exchange (marked as white boxes) concerning the formal aspects of the interview (interviewees' consent, confidentiality with respect to personal data), the introduction of the interviewer and interviewee, as well as a short presentation of the purpose of the interview and the topic under research.

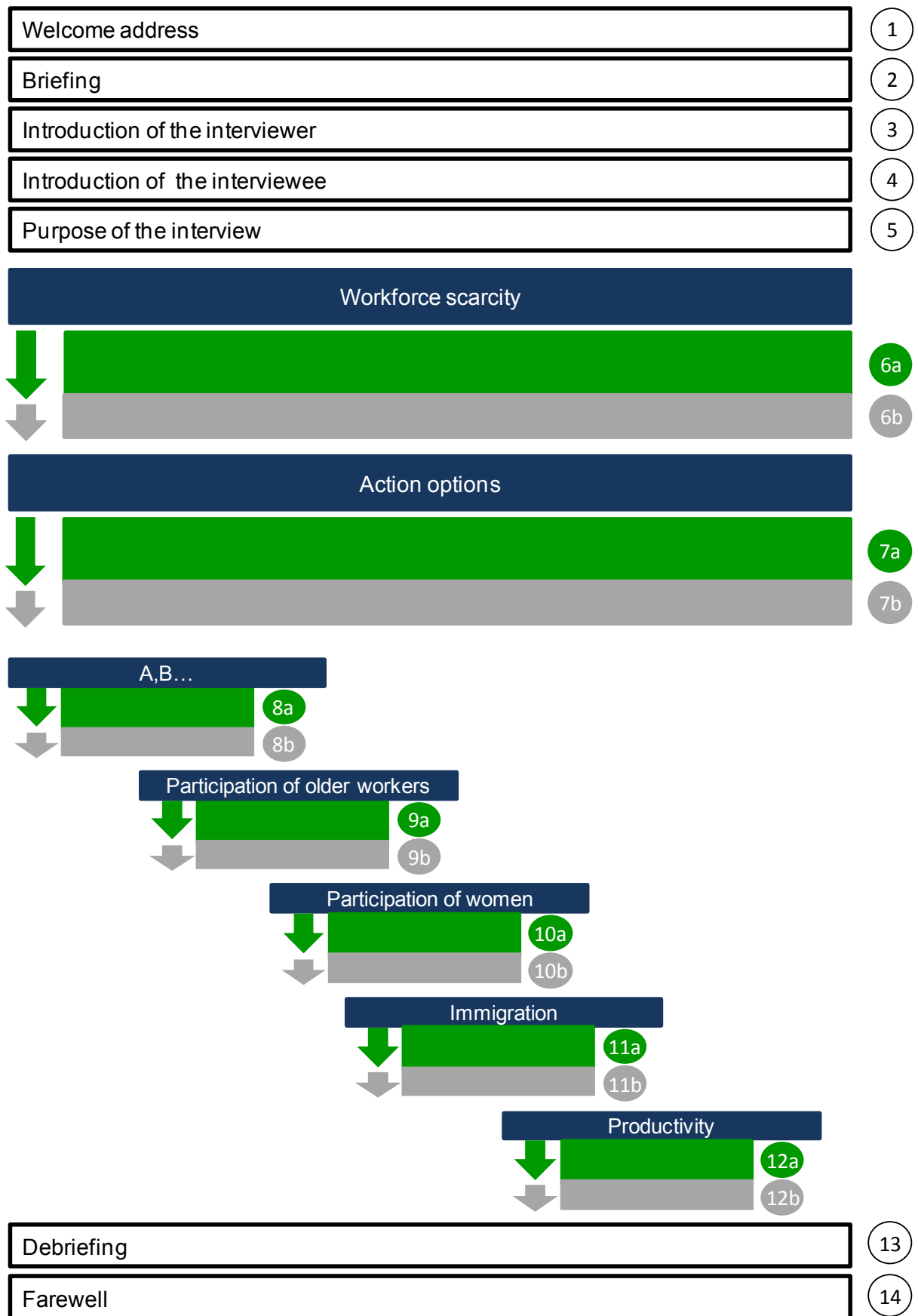
The main topics that should be covered by the interview are marked with blue boxes in the interview flow diagram. The main course of the interview will start from a discussion of the implications of workforce scarcity on economies and companies followed by an in-depth discussion of possible action options to cope with the problem in the future. Topics that are not foreseen by the interviewer but that are raised by the respondent are marked as topics "A,B...". These emergent topics might represent those with the most interesting information. It is essential to dig deeper into these unforeseen topics, using spontaneous questions. The sequence within the action options, as given in the diagram, is not fixed. It has to be adapted to the answers given by the respondent.

Each blue box is followed by a green box which refers to questions regarding the topic indicated in the blue box (questions marked with bullet points serve as probe question to give the respondent assistance).

Between each topic there is a short sequence allowing for a transition to the next topic (indicated by a grey box). This sequence can contain a short summary of the past topic (if this helps to clarify the understanding) and a brief introduction to the next topic.

In order to gain a broad spectrum of opinions, the interviewees are representatives of companies or experts in the field of Japan or Switzerland. All interviews will cover the same topics but the questions will be slightly adapted to the interviewees' different backgrounds. An interview guide for experts from Japan is attached in appendix 4 as an example.

**Appendix 3: Interview flow diagram**



Source: Author

**Appendix 4: Interview guide**

Target Group	Expert for Japan
General remarks	The questions in this interview guide are adapted to the target group.
1	Mr./Ms. XXXX First of all I would like to thank you for giving me the opportunity to conduct an interview with you. It is a great honor and pleasure for me to be here today. I am convinced that you will contribute significantly to my research with your answers.
2	<p>Before we start though, I would like to give you a short overview of what awaits you during the next hour.</p> <p>After clarifying certain points regarding confidentiality, I will briefly introduce myself. Afterwards I would like to invite you to do the same and to tell me something about yourself. Before jumping into the questions, I will give you a short introduction to the topic.</p> <p>Let us talk about the confidentiality of our interview:</p> <ul style="list-style-type: none"> <li>• I would like to ask you whether you would prefer to be named in the appendix published in my master thesis or whether you wish to act as an anonymous respondent to the interview questions. I assure you that none of your answers will be traced back to you.</li> <li>• Is it alright if I record our conversation?</li> </ul> <p>Please do not hesitate to ask any questions during the interview if you have the feeling that something may be unclear, or to clarify your responses if you think I have misunderstood your point.</p>
3	<p>I would like to introduce myself briefly. I am studying Strategy and International Management (SIM) at the University of St. Gallen (HSG), and expect to gain my master's degree in 2012. I am currently writing my master's thesis in the field of demographic change. My interest in this topic was stimulated by Dr. Groth, who offered a class at our university entitled "Megatrend Global demographic change". He strikingly increased my awareness of the importance of this crucial topic.</p> <p>If you have any questions regarding myself, please do not hesitate to ask me. If not, I would like to invite you to present yourself.</p>
4	
5	<p>The world is expected to have a population of more than 8.5 billion by 2050. This growth will mainly take place in developing countries.</p> <p>As highly industrialized countries, Switzerland and Japan are challenged by a historically unprecedented phenomenon - the phenomenon of a shrinking and rapidly ageing workforce. Policy makers and business leaders must find strategies to cope with this phenomenon to halt the impending decline of the economy and a disintegration of the welfare state.</p> <p>The following interview will focus on this expected labor force shortage and on possible action options government and companies could consider to handle it in Japan.</p>
<b>Workforce scarcity</b>	
6a	<p>What is the importance of the topic "labor force scarcity" in Japan?</p> <ul style="list-style-type: none"> <li>• What are manifestations of this importance in Japan?</li> <li>• Why is it not important?</li> </ul>

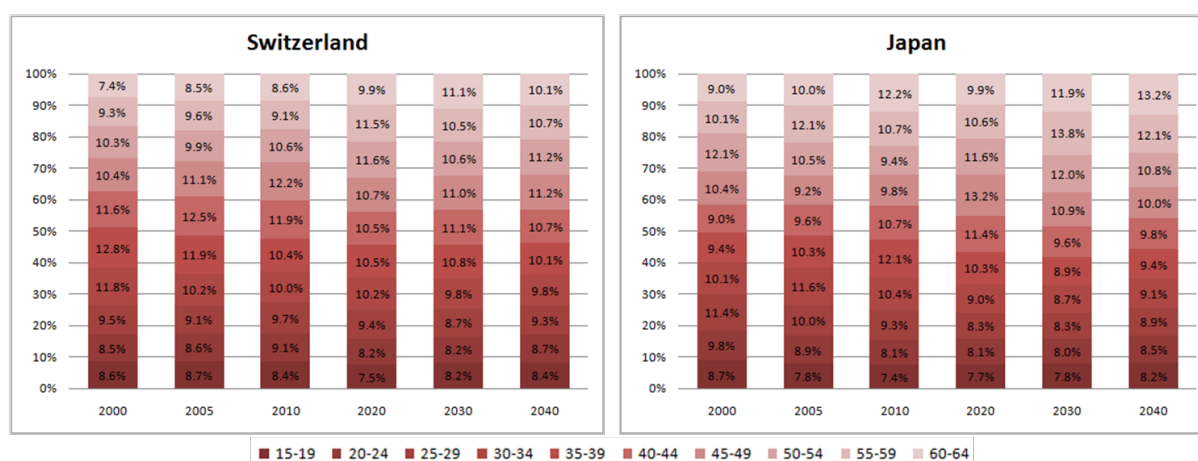
	What are the implications of labor force scarcity for Japan? <ul style="list-style-type: none"> <li>Why implication A,B,C...</li> </ul>
	In which fields does Japan already experience labor force scarcity? <ul style="list-style-type: none"> <li>Why does Japan experience labor force scarcity in these fields?</li> </ul>
	How will the current events in Japan affect the workforce crisis?
6b	<b>Transition to action options:</b> Short summary related to the responses: <ul style="list-style-type: none"> <li>If labor force scarcity is/will become an important topic in Japan, both the government and companies are challenged to find suitable strategies.</li> <li>If labor force scarcity is not perceived as an important topic, why is this the case?</li> </ul>
<b>Action options</b>	
7a	What kind of action options would you recommend to business leaders and policy makers to cope with labor force scarcity?
	What kind of action options would you not recommend to business leaders and policy makers in Japan?
7b	<b>Transition to next action option:</b> You have now mentioned several action options. In the following, I would like to focus a little bit more on these options.
<b>A, B...</b>	
8a	Why is A, B... a viable option for Japan?
	Why would you not recommend A, B...?
8b	<b>Transition to next action option:</b> In the following part I would like to discuss the applicability of other options that have not yet been mentioned in our interview. One option might be to tap underexploited pools of potential workforce.
<b>Participation of older workers</b>	
9a	What would you say if I mention a higher participation rate of older workers as an action option?
	Why is it/is it not a good option for Japan?
	Which cultural attitudes that could jeopardize this action option?
	What deters companies from recruiting or retaining older workers?
	What drives companies to recruit or retain older workers
9b	<b>Transition to next action option:</b> Another group which may also have been underexploited so far is the group of well-educated women.

Participation of women	
10a	What would you say if I mention a higher participation rate of women in the labor force as an action option?
	In your opinion, what are important determinants for women to participate in the labor force?
	Why A, B...?
	Only if not part of A, B... <ul style="list-style-type: none"> <li>• What role do cultural reasons play?</li> <li>• What is the role of alternative work place and work time models?</li> <li>• In your opinion, how does discrimination with respect to wage levels or careers influence the labor force participation of women?</li> </ul>
10b	<b>Transition to next action option:</b> The increasing participation of older workers and women draws from an existing potential in a country to increase the labor supply. An additional option to increase the potential might be immigration.
Immigration	
11a	What would you say if I mention immigration as an action option for Japan?
	Which cultural attitudes could jeopardize this action option? <ul style="list-style-type: none"> <li>• What role does cultural distance play?</li> </ul>
	In your opinion, how sustainable is the immigration option to solve the problem of a shrinking workforce in the Japanese economy?
11b	<b>Transition to next action option:</b> So far, we have looked at measures to increase the absolute amount of labor supply, but there may also be another option.
Productivity	
12a	What would you say if I mention productivity as a possible action option?
	What level of productivity increase do you expect for the next two decades?
	Why do you expect this increase in productivity? <ul style="list-style-type: none"> <li>• What will bring about this productivity increase?</li> <li>• What actions are to be taken by the management to achieve such a productivity increase?</li> <li>• What actions shall be taken by policy leaders?</li> <li>• What are the impacts of an ageing workforce on innovativeness and productivity?</li> </ul>
12b	<b>Transition to next action option:</b> Now that we have discussed all action options available to business leaders and policy makers to cope with the challenge of workforce scarcity, I would like to ask whether you think that the current events in Japan have changed anything regarding the applicability of these action options? If so, what has changed?

13	Give a short summary of the main points discussed in the interview.
	Give the respondent the chance to add anything: is there anything else you would like to say before we end the interview?
	Thank you for giving me this opportunity; may I contact you in the event of any uncertainties? Please do not hesitate to contact me if you have any questions concerning the interview or my thesis.
14	

Source: Author's design

### Appendix 5: Detailed age composition of working age population



Source: Author's calculations based on BFS (2011a); BFS (2010b); Statistics Bureau (2011a)

### Appendix 6: Development of male and female labor force participation rate in Switzerland

Male												
Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
1970	62.8%	87.7%	96.2%	98.8%	99.1%	98.9%	98.4%	97.1%	94.9%	87.3%	31.7%	84.3%
1980	56.7%	84.9%	94.8%	98.3%	98.9%	98.8%	98.3%	96.9%	93.6%	82.7%	15.1%	79.3%
1990	56.0%	83.8%	93.9%	97.8%	98.6%	98.7%	98.3%	97.4%	94.8%	79.8%	9.2%	79.3%
2000	54.4%	79.4%	91.9%	95.9%	96.3%	95.8%	95.1%	93.5%	88.6%	66.2%	8.5%	75.2%
2005	54.8%	77.9%	93.3%	97.0%	97.1%	96.4%	95.0%	94.3%	88.5%	64.7%	11.2%	75.1% <sup>1</sup>
2010	55.3%	81.0%	92.0%	97.3%	97.7%	96.9%	96.1%	93.7%	90.3%	70.2%	14.1%	75.2% <sup>1</sup>

Female												
Years	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Total
1970	58.4%	71.2%	50.7%	42.9%	43.2%	44.7%	45.3%	42.9%	39.4%	29.9%	9.7%	41.5%
1980	51.1%	76.2%	58.6%	48.9%	50.3%	52.3%	50.8%	46.9%	41.1%	24.4%	4.8%	42.1%
1990	49.2%	80.4%	71.4%	60.9%	62.9%	66.8%	66.6%	60.6%	49.9%	24.9%	3.2%	49.3%
2000	46.7%	78.4%	82.8%	76.7%	75.6%	78.2%	79.0%	73.4%	63.0%	30.8%	3.5%	56.0%
2005	51.5%	78.0%	86.7%	78.7%	78.1%	81.4%	85.1%	78.9%	70.8%	42.9%	4.9%	59.3% <sup>1</sup>
2010	52.4%	76.1%	85.5%	83.0%	81.9%	81.1%	85.5%	83.5%	74.4%	46.9%	6.6%	60.6% <sup>1</sup>

Source: 1970-2000 author's calculations based on Gross (2006); 2005 and 2010 based on OECD (2010); <sup>1</sup> based on Tai (2009)



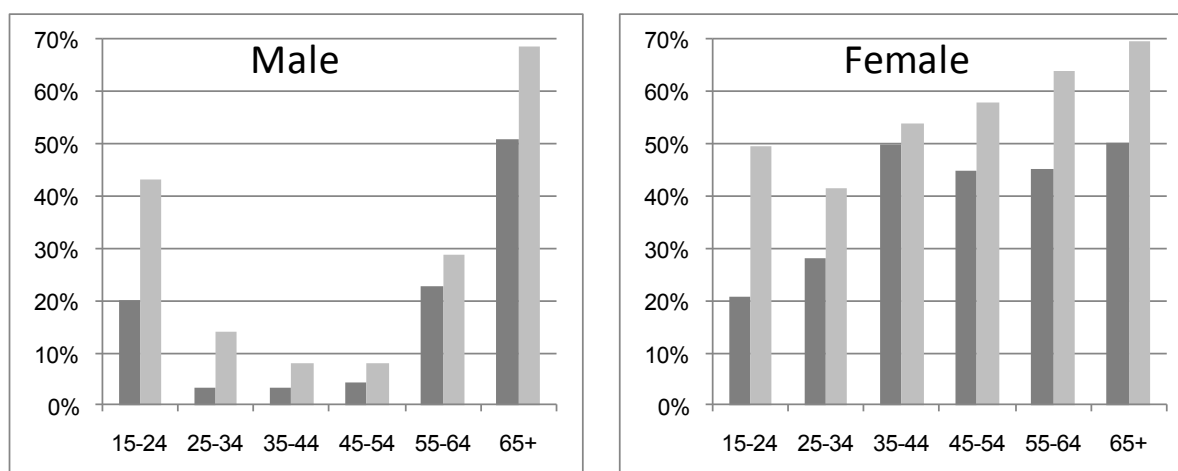
**Appendix 7: Development of male and female labor force participation rate in Japan**

Male														
Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	65-69	70+	Total
1970	31.4%	80.7%	97.1%	97.8%	97.8%	97.5%	97.0%	95.8%	91.2%	81.5%	49.4%	66.2%	36.5%	81.8%
1975	20.5%	76.5%	97.2%	98.1%	98.1%	97.6%	96.7%	96.2%	92.2%	79.4%	44.4%	63.9%	31.6%	81.4%
1980	17.4%	69.6%	96.3%	97.6%	97.6%	97.6%	96.5%	96.0%	91.2%	77.8%	41.0%	60.1%	28.4%	79.8%
1985	17.3%	70.1%	95.7%	97.2%	97.6%	97.2%	96.8%	95.4%	90.3%	72.5%	37.0%	55.6%	26.8%	78.1%
1990	18.3%	71.7%	96.1%	97.5%	97.8%	97.6%	97.3%	96.3%	92.1%	72.9%	36.5%	54.1%	26.3%	77.2%
1995	17.9%	74.0%	96.4%	97.8%	98.0%	97.8%	97.7%	97.3%	94.1%	74.9%	37.3%	54.2%	26.1%	77.6%
2000	18.4%	72.7%	95.8%	97.7%	97.8%	97.7%	97.3%	96.7%	94.2%	72.6%	34.1%	51.1%	24.3%	76.4%
2005	16.2%	68.6%	93.6%	96.4%	97.0%	97.0%	96.7%	95.7%	93.6%	70.3%	29.4%	46.7%	21.1%	73.3%
2010	14.5%	67.1%	94.2%	96.2%	96.7%	96.8%	97.0%	95.8%	92.8%	76.0%	28.8%	48.9%	19.6%	71.6%

Female														
Year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	65-69	70+	Total
1970	33.6%	70.6%	45.5%	48.2%	57.5%	62.8%	63.0%	58.8%	48.7%	39.1%	17.9%	27.8%	11.6%	49.9%
1975	21.7%	66.2%	42.6%	43.9%	54.0%	59.9%	61.5%	57.8%	48.8%	38.0%	15.3%	24.7%	9.3%	45.7%
1980	18.5%	70.0%	49.2%	48.2%	58.0%	64.1%	64.4%	59.3%	50.5%	38.8%	15.5%	25.8%	9.6%	47.6%
1985	16.6%	71.9%	54.1%	50.6%	60.0%	67.9%	68.1%	61.0%	51.0%	38.5%	15.5%	26.8%	10.0%	48.7%
1990	17.8%	75.1%	61.4%	51.7%	62.6%	69.6%	71.7%	65.5%	53.9%	39.5%	16.2%	27.6%	10.4%	50.1%
1995	16.0%	74.1%	66.4%	53.7%	60.5%	69.5%	71.3%	67.1%	57.0%	39.7%	15.6%	27.2%	10.3%	50.0%
2000	16.6%	72.7%	69.9%	57.1%	61.4%	69.3%	71.8%	68.2%	58.7%	39.5%	14.4%	25.4%	9.8%	49.3%
2005	16.5%	69.8%	74.9%	62.7%	63.0%	71.0%	73.9%	68.8%	60.0%	40.1%	12.7%	24.0%	8.7%	48.4%
2010	15.9%	69.4%	77.1%	67.8%	66.2%	71.6%	75.8%	72.8%	63.3%	45.7%	13.3%	27.4%	8.4%	48.5%

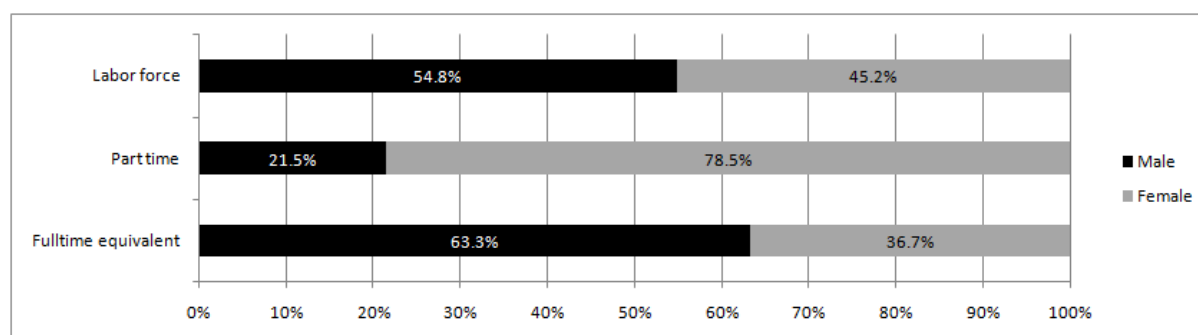
Source: Author's graph based on Statistics Bureau (2011b)

**Appendix 8: Proportion of non-regular workers in Japan**



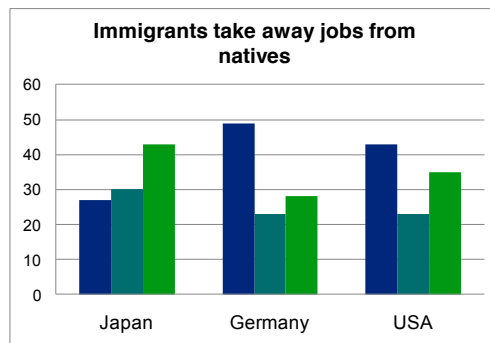
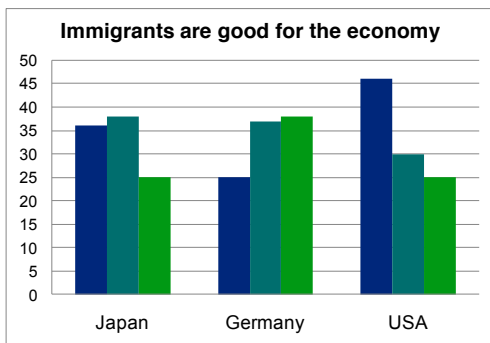
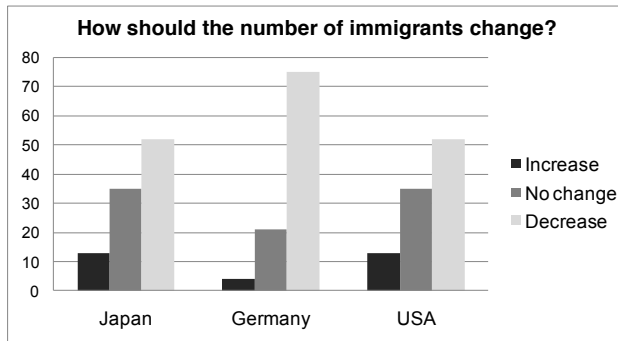
Source: Author's graph based on Statistics Bureau (2011b)

**Appendix 9: The proportion of males and females in the labor force (2<sup>nd</sup> quarter of 2010), in part-time employment (June 2009) and in full-time equivalent (2008).**

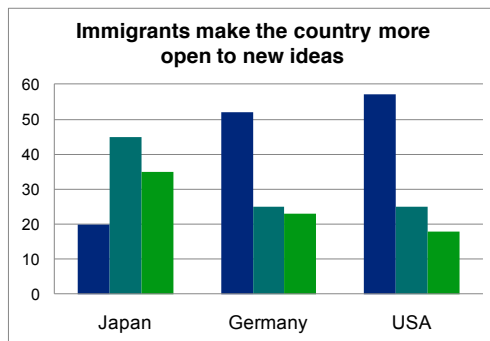
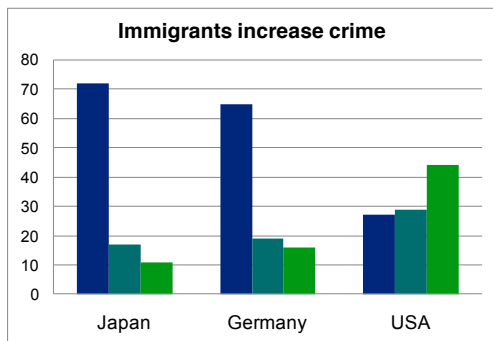


Source: Killias (2009)

**Appendix 10: National opinion data for Japan, Germany and the USA reflecting attitudes towards immigrants and immigration policies**



■ Agree    ■ Neither    ■ Disagree



Source: Own graph based on Simon & Sikich (2007)

**Appendix 11: Recommendations to increase the participation of older workers**

Recommendations for business leaders		
Country	Title and activities	Co-operative effects
Switzerland and Japan	<p>Intensify vocational training for older workers with respect to quantity and quality</p> <ul style="list-style-type: none"> <li>• Instruct managers to remove unfounded stereotypes about older workers' willingness for change, learning and performance</li> <li>• Eliminate discrimination of older workers with respect to accessibility to training</li> <li>• Develop (bilaterally) skill acquisition plans during the performance review that are adapted to the needs of older workers</li> <li>• Include learning targets in performance planning, performance assessment and incentive programs</li> <li>• Offer age-adapted vocational training classes that consider distinct psychological mechanisms in skills acquisition for older adults</li> <li>• Implement funds (as with pension funds) provided by employees and the company to finance vocational training</li> </ul>	<p>Productivity: higher skills of older workers increase productivity</p> <p>Immigration: conservation of employability unburdens immigration – less immigration reduces negative attitudes and resistance</p>
Switzerland and Japan	<p>Implement two-way mentoring</p> <ul style="list-style-type: none"> <li>• Evaluate critical knowledge to be retained or exchanged between generations</li> <li>• Increase generation diversity in project teams to foster awareness of critical knowledge among employees</li> <li>• Avoid discriminatory practices in internal promotion when establishing multi-generational teams to foster trust between generations</li> <li>• Evaluate owners and recipients of critical knowledge</li> <li>• Establish clear responsibilities for mentoring between owner and recipient</li> <li>• Include learning targets in performance planning, performance assessment and incentive programs</li> </ul>	<p>Productivity: Free vocational training for staff in all age brackets prevents brain drain.</p>
Switzerland and Japan	<p>Exchange best practices</p> <ul style="list-style-type: none"> <li>• Create international network to exchange and discuss best practices with other companies and interest groups</li> </ul>	
Switzerland	<p>Implement alternative workplace, work time and compensation models</p> <ul style="list-style-type: none"> <li>• Adapt Japanese models (e.g. Shukko, Tensekei and telecommuting) to Swiss peculiarities (for instance less commitment of Swiss workers but stronger need for work/leisure balance)</li> <li>• Develop new models (e.g. expert pools, fragmented career models)</li> <li>• Implement instruments for early planning of retirement</li> <li>• Implement retirement models flexible in both directions (phasing out)</li> <li>• Switch from seniority-driven to strongly performance-driven wage model for the entire staff</li> <li>• Lobby for changes in pension regulations concerning compatibility of part-time employment and eligibility for pension payments after statutory retirement age</li> </ul>	<p>Productivity: Optimized work/life balance leads to higher satisfaction, motivation and performance</p>
Switzerland	<p>Create a corporate culture that appreciates age and experience</p> <ul style="list-style-type: none"> <li>• Offer interesting jobs to older workers to foster motivation</li> </ul>	<p>Productivity: Appreciation of age</p>

	<ul style="list-style-type: none"> <li>• Show appreciation for their work and offer them prospects</li> <li>• Clear commitment by top management (sends important signals)</li> <li>• Communicate success stories (e.g. Older worker who went to Singapore to build a new research campus)</li> </ul>	and experience enhances motivation and hence performance
Japan	<p>Implement work time, work place and employment models that support corporate allegiance</p> <ul style="list-style-type: none"> <li>• Convey sense of belonging to company (no exclusion from corporate briefings, social events, performance planning and assessments)</li> <li>• Switch from seniority-driven to strongly performance-driven wage model for the entire staff</li> <li>• Implement meeting forums at the company headquarters and on the intranet for employers with such models</li> </ul>	
Japan	<p>Exploit (as a foreign company) the pool of neglected, older workers</p> <ul style="list-style-type: none"> <li>• Exploit neglected pool of older worker to close cultural gap</li> <li>• Offer highly regarded positions in the company to show appreciation</li> </ul>	<p>Productivity: Profit from their highly developed networks</p> <p>Immigration: overcome cultural distance</p>
Recommendations for policy maker		
Switzerland and Japan	<p>Change pension law and regulations</p> <ul style="list-style-type: none"> <li>• Increase statutory pension age and actuarial fairness</li> <li>• Reduce burden on companies for pension payments for older workers</li> <li>• Only Switzerland: Include regulation enabling compatibility of employment and eligibility for pension payments</li> </ul>	
Switzerland	<p>Foster cultural change in society</p> <ul style="list-style-type: none"> <li>• Change views concerning a fixed retirement age</li> <li>• Change views of employment as something negative, meaning that retirement is the end goal</li> <li>• Push perception of age more into the direction of the Japanese population's perception</li> </ul>	

Source: Author

**Appendix 12: Recommendations to increase the female participation rate**

Recommendations for business leaders		
Country	Title and activities	Co-operative effects
Switzerland and Japan	Support the eradication of role stereotype of women <ul style="list-style-type: none"> <li>• Make women in executive positions more visible within and outside the company (communicate success stories)</li> <li>• Encourage women in performance reviews to assume responsible positions (install mentoring)</li> <li>• Provide trained managers or successful business women as mentors</li> <li>• Educate managers in women-specific behavior</li> <li>• Organize job fairs at universities to encourage women to apply for and accept a job</li> <li>• Clear statement in job advertisements that position is open to women</li> <li>• Consider women-specific behavior during recruitment process</li> <li>• Create and practise a women-friendly environment and culture</li> <li>• Show top management commitment</li> <li>• Eliminate stereotype among managers that responsibility equals full-time employment</li> </ul>	Productivity: Inherent potential to increase diversity in companies and to create a new culture creating a breeding ground for innovation.
Switzerland and Japan	Adapt working conditions to the fathers' needs <ul style="list-style-type: none"> <li>• Foster awareness among managers of the needs of young fathers</li> <li>• Adapt career model to specific needs but offer attractive development opportunities</li> <li>• Adapt work time to the household's needs (men and women)</li> <li>• Dismantle disadvantages of taking parental leave and actively encourage fathers to take paternity leave</li> </ul>	Productivity: Enabling better work/life balance for men leads to higher satisfaction, motivation and performance
Switzerland and Japan	Increase awareness among managers for the distinct characteristics of men and women <ul style="list-style-type: none"> <li>• Sensitize managers to women-specific characteristics (e.g. when negotiating for a job)</li> <li>• Install mentoring programs</li> </ul>	
Switzerland and Japan	Exchange best practices <ul style="list-style-type: none"> <li>• Create international networks to exchange best practices</li> <li>• Establish think tanks</li> </ul>	
Switzerland	Adapt employment conditions to women's changing needs <ul style="list-style-type: none"> <li>• Implement gender neutrality in promotion</li> <li>• Implement measures to reconcile family and work life</li> <li>• Increase provision of company-subsidized childcare</li> <li>• Transition to flexible career models</li> <li>• Keep young mothers connected to the company and offer attractive re-employment opportunities (eliminate maternity leave discrimination)</li> <li>• Welcome women back after their career break, assess training needs and offer appropriate training</li> </ul>	Productivity: Avoid brain drain due to females leaving the workforce.
Switzerland	Remove inherent aversion to certain industries (especially to high tech and financial industries) <ul style="list-style-type: none"> <li>• Deliberately target women at school age to actively influence career or study decisions</li> <li>• Highlight the interest of these industries to also hire women in top positions</li> </ul>	

Japan	<p>Adapt employment conditions to women’s changing needs</p> <ul style="list-style-type: none"> <li>• Gain inspiration from the conditions implemented by foreign companies in Japan</li> <li>• Reduce attendance time and after-work obligations</li> <li>• Implement gender neutrality in dual track system or eliminate dual track system altogether</li> <li>• Implement gender neutrality in promotion and recruitment</li> <li>• Keep young mothers connected to the company and offer attractive re-employment opportunities (eliminate discrimination against maternity leave)</li> <li>• Welcome women back after their career break and assess training needs</li> <li>• Increase company-subsidized childcare</li> </ul>	Productivity: inherent potential to increase diversity in companies and to create a new culture, stimulating a breeding ground for innovation.
Japan	<p>Intensify sourcing of skilled female workers by foreign companies</p> <ul style="list-style-type: none"> <li>• Offer working conditions of the company’s home country</li> <li>• Promote women to top positions to indicate greater willingness to promote than traditional companies</li> </ul>	Productivity: Profit from their highly developed networks
Recommendations for policy makers		
Switzerland and Japan	<p>Increase supply of affordable care (to remove “tax” burden)</p> <ul style="list-style-type: none"> <li>• Subsidize childcare facilities</li> <li>• Subsidize parents making use of childcare facilities directly or via tax release</li> <li>• Subsidize care for the elderly</li> </ul>	
Switzerland and Japan	<p>Influence perception of women in society</p> <ul style="list-style-type: none"> <li>• Staff governmental position with women and increase their visibility</li> <li>• Influence perception of working mothers (otherwise the day care offered may not be used)</li> </ul>	
Switzerland	<p>Countrywide alignment of school system to fit the demands of working mothers</p> <ul style="list-style-type: none"> <li>• Further increase harmonization of the schooling system</li> </ul>	
Japan	<p>Eliminate discriminatory practices</p> <ul style="list-style-type: none"> <li>• Push all claims of previously implemented laws and regulations (EEOL, CEDAW, Law to promote nurturing of the next generation)</li> <li>• Introduce penalties for non-compliance</li> <li>• Eliminate tax exemptions and release for pension payments for women to make leaving work less attractive</li> </ul>	

Source: Author’s design

**Appendix 13: Recommendations for an optimized application of the immigration lever**

Recommendations for business leaders		
Country	Title and activities	Co-operative effects
Switzerland	Prevent overuse of immigration lever to avoid resistance <ul style="list-style-type: none"> <li>• Bear in mind the non-sustainability of the lever (decreasing attractiveness, similar demographic changes in countries of origin)</li> <li>• Do not fall prey to mitigating the importance of the other three levers</li> <li>• Send clear signals that native workers are not discriminated against in recruitment and promotion</li> <li>• Do not use immigration as a wage dumping instrument</li> <li>• Give native workers the chance to learn on-the-job and to adjust their skill set before hiring abroad</li> </ul>	Participation rate of older workers and women: negative co-operative effect when exclusively focusing on immigration. Jeopardizes development of other levels
Switzerland	Communicate the merits of immigrants <ul style="list-style-type: none"> <li>• Actively advertise the importance of immigrants to economic welfare</li> <li>• Calculate and communicate the economic benefit to society of attracting and educating international students</li> </ul>	
Japan	Internationalize companies with respect to staff, culture and language <ul style="list-style-type: none"> <li>• Actively use off-shoring, outsourcing and other types of collaboration with foreign companies to internationalize</li> <li>• Move away from local proprietary knowledge and standards implicit in “<i>keiretsu</i>-like system” and establish more international partnerships with foreign firms</li> <li>• Hire international consultancies to boost internationalization and to avoid mistakes</li> <li>• Send skilled workers on sabbatical to foreign affiliates or recognized universities</li> <li>• Support language courses</li> <li>• Make foreign language skills a criterion for promotion</li> <li>• Make working experience or education experience abroad a criterion for promotion</li> <li>• Offer more foreign students a temporary job or a sabbatical</li> </ul>	Productivity: Openness, diversity, mobilization are important factors for the innovative potential of a company
Recommendations for policy makers		
Switzerland	Change legislation and regulations for immigration from non-EU states <ul style="list-style-type: none"> <li>• Move away from cantonal contingents or make their exchange easier</li> <li>• Increase quotas for non-EU states</li> <li>• Design circular immigration models (learn from Japan’s problems)</li> </ul>	
Switzerland	Create awareness among business leaders of alternatives to immigration <ul style="list-style-type: none"> <li>• Emphasize the other available levers</li> <li>• Create forums to discuss the merits of the other three levers with business leaders and other experts</li> </ul>	
Switzerland	Maintain the country’s attractiveness <ul style="list-style-type: none"> <li>• Maintain favorable business environment (taxes, etc.)</li> <li>• Maintain high standard of living</li> <li>• Maintain quality and international compatibility of education system</li> <li>• Increase international footprint of top universities</li> <li>• Monitor other countries (to sustain comparative attractiveness)</li> </ul>	

	<ul style="list-style-type: none"> <li>Extend time for foreign students to find a job in Switzerland after graduation (currently 6 months)</li> </ul>	
Japan	<p>Change legislation and regulations for immigration</p> <ul style="list-style-type: none"> <li>Overhaul immigration policies and the visa regime (objective evaluation of approvals, longer visa) especially for highly skilled immigrants</li> <li>Formulate a clear immigration strategy for highly skilled employees and “walk the talk”</li> <li>Adapt immigration bureaucracy to the standards of other countries</li> <li>Facilitate application of permanent residency and citizenship</li> <li>Revive circular immigration and relax restrictions for them (e.g. Filipino caregivers)</li> </ul>	
Japan	<p>Enhance the country's comparative attractiveness for immigrants (workers, students)</p> <ul style="list-style-type: none"> <li>Establish a comprehensive welfare system</li> <li>Offer integration programs to immigrants</li> <li>Admittance to multiculturalism</li> <li>Open top universities and other public institutions to foreign staff</li> <li>Make top universities affordable to foreign students</li> <li>Enforce education in foreign languages and cultures as early as at primary school</li> </ul>	
Japan	<p>Support cultural openness among the native citizens</p> <ul style="list-style-type: none"> <li>Create framework for bilateral exchange of people and especially students</li> <li>Communicate the merits of immigrants (with respect to economic welfare)</li> </ul>	

Source: Author's design

**Appendix 14: Recommendations to increase productivity**

Recommendations for business leaders		
Country	Title and activities	Co-operativity
Switzerland and Japan	<p>Shift R&amp;D focus to more promising sectors with higher return on investment (e.g. service sector)</p> <ul style="list-style-type: none"> <li>Screen current R&amp;D portfolio</li> <li>Actively manage the R&amp;D pipeline</li> <li>Break up rigid structures that prevent the shift to these sectors</li> </ul>	
Switzerland and Japan	<p>Concentrate on higher value generating activities</p> <ul style="list-style-type: none"> <li>Scour portfolio for low value generating activities</li> <li>Evaluate opportunities for off-shoring and outsourcing (portfolio reshuffling)</li> <li>Refocus freed labor force towards higher value-generating activities (for instance, R&amp;D, adoption of new technologies)</li> </ul>	
Switzerland	<p>Develop higher risk disposition for cutting-edge technologies</p> <ul style="list-style-type: none"> <li>Intensify contact with universities with respect to quantity and quality</li> <li>Support high-risk projects instead of projects in established fields</li> <li>Spend more venture capital in collaborations on high-risk</li> </ul>	<p>Immigration: Pronounced focus on high-risk cutting-edge technologies attracts skilled workers and investors</p>



	<p>technologies if they fit into the portfolio</p> <ul style="list-style-type: none"> <li>• Support spin-offs to exploit results from cutting-edge research at universities</li> <li>• Offer contracts that guarantee high incentives to inventors in the event of success</li> <li>• Adapt company culture and install instruments allowing for risk-taking (in the mean time, control the risks)</li> </ul>	
Switzerland	<p>Support education of skilled workers</p> <ul style="list-style-type: none"> <li>• Support dual education system by offering apprenticeships</li> <li>• Intensify contact with universities of applied science to help them establish research topics of interest to the company</li> <li>• Establish collaborations with universities of applied science to speed up technology adoption</li> <li>• Influence educational topics (own interest versus general interest) to avoid pork cycle effects</li> <li>• Intensify collaboration with universities to increase practice orientation</li> <li>• Offer post doc fellowships to boost implementation of new technologies</li> <li>• Implement vocational training for hierarchical levels adapted to employees' needs</li> </ul>	<p>Participation rates: Education at all levels increases employability in all ages and gender cohorts and hence raises the participation rates of the country's internal workforce, relaxing the immigration lever</p> <p>Productivity: Profit from their highly developed networks</p>
Switzerland	<p>Develop a motivating corporate culture</p> <ul style="list-style-type: none"> <li>• Enhance motivation by offering opportunities for vocational training (along the whole career lifecycle)</li> <li>• Implement performance-based promotion and compensation system</li> <li>• Show appreciation for remarkable achievements</li> </ul>	
Japan	<p>Implement a dual education system</p> <ul style="list-style-type: none"> <li>• Lobby for a dual education system</li> <li>• Collaborate with policy makers in developing an acceptable system</li> <li>• Build a company network to promote an apprenticeship system</li> <li>• Support foundation of universities of applied science</li> </ul>	
Japan	<p>Change corporate culture and exploit human resource potential</p> <ul style="list-style-type: none"> <li>• Identify attitude and stereotypical barriers to innovation (for instance, rigid hierarchical structure, eliminate beliefs that change equals loss of quality)</li> <li>• Eliminate double track system</li> <li>• Enhance motivation (for instance, offer vocational training, reducing inequality between non-regular workers and regular workers)</li> <li>• Implement performance-based promotion and compensation system</li> </ul>	
Japan	<p>Increase internationalization and openness</p> <ul style="list-style-type: none"> <li>• Move away from local proprietary knowledge and standards implicit in "keiretsu-like system" and establish more international partnerships with foreign firms</li> <li>• Use off-shoring, outsourcing and international collaborations to establish international relations</li> <li>• Express higher commitment to academia (national and international)</li> </ul>	<p>Immigration: More open companies will attract more skilled workers from foreign countries.</p>

	<ul style="list-style-type: none"> <li>• Make R&amp;D efforts more public by publishing more in international scientific journals</li> <li>• Seek collaboration on hot topics with universities and companies and increase international contribution to patenting</li> </ul>	
Recommendations for policy makers		
Switzerland and Japan	<p>Shift R&amp;D focus to more promising sectors with higher return on investment (e.g. service sector)</p> <ul style="list-style-type: none"> <li>• Channel national funds to more promising sectors</li> <li>• Support collaborations of universities and start-ups</li> <li>• Reduce taxes for start-ups</li> </ul>	
Switzerland and Japan	<p>Support venture capital-driven commercialization of R&amp;D outcomes</p> <ul style="list-style-type: none"> <li>• Improve tax advantages for venture capital</li> <li>• Implement governmental seed-funds for start-ups.</li> <li>• Introduce bankruptcy laws which distribute risk between entrepreneurs and fund providers</li> <li>• Enable higher risk taking for pension funds' portfolios</li> </ul>	Immigration: Attracts foreign skilled workers to settle as entrepreneurs
Switzerland	<p>Improve macroeconomic factors to increase competition</p> <ul style="list-style-type: none"> <li>• Reduce protection of sheltered sectors</li> <li>• Reduce governmental ownership in sheltered sectors</li> </ul>	
Japan	<p>Improve macroeconomic factors to enhance knowledge dispersion</p> <ul style="list-style-type: none"> <li>• Upgrade product market regulation and competition policy to promote diffusion of technology</li> <li>• Improve the system of intellectual property rights to strengthen incentives for innovation</li> <li>• Strengthen human capital development to boost the generation and diffusion of innovation</li> <li>• Strengthen collaboration between academia and industry</li> </ul>	
Japan	<p>Implement a dual education system</p> <ul style="list-style-type: none"> <li>• Offer alternatives to university education</li> <li>• Collaborate with companies to develop a set-up. Be inspired by the Swiss dual system</li> <li>• Establish the necessary infrastructure (e.g. legislation for apprenticeships)</li> </ul>	

Source: Author's design