



Project Papers 2019

on Demographic Challenges

Megatrend “Global Demographic Change” Tackling Business and Society Challenges in 2030 and Beyond

*Master Class Seminar by Dr. med. Hans Groth, MBA
at the University of St. Gallen, Switzerland
Fall 2019*



TABLE OF CONTENTS

- I. INTRODUCTION 3
- II. PAPERS OF THE 2019 MASTER CLASS 5
- Country & regional case studies all across the globe**
- A. How sustainable are development strategies in Africa? Compare the approach of China, Europe, the US and the 2021-2024 strategy of Switzerland. 7
- B. Canada: Critically review how this country manages migration. What are the lessons for other countries? 22
- C. Ongoing low fertility in Europe: What is the impact on society, business and governance in the coming 20 years? Are there sustainable incentives for higher fertility? How should it tackle migration? Can it turn longevity into an opportunity?..... 34
- Opportunities arising from demography for business & society**
- D. Our life courses: What will change? What will remain unchanged in the ongoing era of longevity? 47
- E. Does digitalization/information technology/artificial intelligence contribute to make longevity a sustainable achievement? 55
- Geopolitics & financial markets**
- F. What can strategic planners learn from “political demography”? Take the book published by Jack Goldstone as a reference. 68
- G. Analyze and discuss the interaction of population dynamics (migration, fertility, longevity, gender balance etc.) on social cohesion and equality. 73
- III. NEW BOOK PUBLISHED BY THE LECTURER 77
- IV. CONTACT DETAILS 79

I. INTRODUCTION

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

The concept of this class is based on case studies, discussion rounds and interactive outside-the-box conversations on global population dynamics in the 21st century and their impact on business, society and governance. The case studies elaborated each year by the students focus upon four demographic theme categories:

- Country & regional case all across the globe
- Opportunities arising from demography for business & society
- Geopolitics & financial markets
- The unique population dynamics in Switzerland

The 2019 project topics deal with the following themes in more detail:

- Development strategies in Africa - What are differences between Europe and Switzerland, China and the US?
- How will generation Y retire in 2060?
- Migration policies in Canada
- Social coherence in ageing societies
- The Concept of “political demography”
- Innovations and digitalization to make ageing an achievement
- The future of fertility in modern knowledge-based societies

The selection of these topics is for very good reasons:

- Africa – because it this continent where unprecedented population growth with unsolved implications will occur in the 21st century. But how can the continent create a promising future for their citizens?
- Longevity – because life expectancy will continue to increase all across the globe in the 21st century. We need to understand what drives longevity and what are the supporting strategies in business & society to make it an achievement.
- Digitalization – because it will change the way how we will live a longer life. But are we prepared and willing to capture arising opportunities?
- Fertility and migration – because its dynamics will the shape of the future societal and economic future and competitiveness of this continent.
- Retirement in Switzerland – because this topic is far from being put on a sustainable track, particularly in light of a shrinking and ageing population (if migration is excluded).

So far more than 80 case studies have been written since 2009. They all can be retrieved from the following [link](#).

But you may ask now: “What is my motivation to offer such a seminar with both a changing content each year and a very interactive style?”. The coming decades will expose us to demographic dynamics that history has not equipped us to manage/to cope with. It forces us to focus on the future, a period of time which we are not accustomed to reflecting upon. This is why the megatrend “Demographic Change” is so intimidating and makes it all the more crucial to be permanently prepared for innovation and creativity as well as openness for transition and change.

However, this will only be achievable if appropriate education/training and thus knowledge/skills are provided for those who have to lead and manage this upcoming challenge. And it will be generation Y!

My responsibility as a member of the 60+ generation is to provide my professional experience as a “retired manager”. To make this happen I have offered in the past 10 years a platform for academic thinking and exchange for HSG students who want to broaden their scope about demography and its impact on business, governance and society – both as managers and as responsible members in the communities they are living in.

In this year’s autumn semester 16 highly motivated students from 5 different nations (Germany, China, Brazil, Liechtenstein and Switzerland) and from 6 different HSG Programs (MIA, MBF, MAccFin, MUG, MBI, CEMS, Master Exchange) successfully bid for my class.

In this booklet, you will find the corresponding executive summaries which were elaborated by these 16 engaged students in November 2019. Prior to submission all papers have been presented and vividly discussed in class.

I am convinced that these 2019 papers will be an extremely inspiring source on how our “Planet Earth” might develop. One might also agree that these students started to develop a solid understanding about their business and civil society environment in which they are most likely to live in between 2030 and 2050.

On behalf of all 16 students who contributed to the content of this booklet, I am happy to facilitate further discussions with any potential reader.

Dr. med. Hans Groth, MBA

Chairman of the World Demographic & Ageing Forum (WDA Forum)

Guest Lecturer on “Demography and its interdependencies to wealth, health and social sustainability”, University of St. Gallen

II. PAPERS OF THE 2019 MASTER CLASS

Contents

Country & regional case studies all across the globe

- A. How sustainable are development strategies in Africa? Compare the approach of China, Europe, the US and the 2021-2024 strategy of Switzerland.
- B. Canada: Critically review how this country manages migration. What are the lessons for other countries?
- C. Ongoing low fertility in Europe: What is the impact on society, business and governance in the coming 20 years? Are there sustainable incentives for higher fertility? How should it tackle migration? Can it turn longevity into an opportunity?

Opportunities arising from demography for business & society

- D. Our life courses: What will change? What will remain unchanged in the ongoing era of longevity?
- E. Does digitalization/information technology/artificial intelligence contribute to make longevity a sustainable achievement?

Geopolitics & financial markets

- F. What can strategic planners learn from “political demography”? Take the book published by Jack Goldstone as a reference.
- G. Analyze and discuss the interaction of population dynamics (migration, fertility, longevity, gender balance etc.) on social cohesion and equality.

Country & regional case studies

A. How sustainable are development strategies in Africa? Compare the approach of China, Europe, the US and the 2021-2024 strategy of Switzerland

1. Development strategies in Africa: Assessing sustainability
Submitted by Ziqian Feng
2. Swiss, US and Chinese development strategies in Africa
Submitted by Oliver Kilchenmann
3. How sustainable are development strategies in Africa?
Submitted by Andreas Seiler

B. Canada: Critically review how this country manages migration. What are the lessons for other countries?

1. Canada: Critically review how this country manages migration. What are the lessons for other countries?
Submitted by Isabel Bayer
2. A comparison of immigration in Canada and Germany with a focus on the public opinion in immigration
Submitted by Anna-Katharina Kölbl
3. Immigration in Canada: A way of tackling challenges caused by demographic change?
Submitted by Kai Wurster

C. Ongoing low fertility in Europe

1. Incentives to drive higher fertility rates in Europe
Submitted by Simon Frei
2. Ongoing Low Fertility in Europe – Threats and Opportunities of the Demographic Change
Submitted by Annette Kick
3. Ongoing low fertility in Europe – Macro-environmental analysis along the PESTEL dimensions
Submitted by Konstantin Lamm

Development Strategies in Africa: Assessing Sustainability

A Comparison of the Chinese, US and Swiss Approaches

Management Summary submitted by Ziqian Feng

Introduction

The 21st century presents Africa with both great opportunities and critical challenges. It will witness Africa's great population boom – according to the United Nations (UN), the population in Sub-Sahara Africa (SSA) will likely to more than triple from 1.06 billion people in 2019 to 3.78 billion in 2100 (United Nations, 2019). Africa's population is young, fast growing and increasingly urbanized, which, given an expanding middle-class and swift technological advancement and innovations, indicates a huge 'demographic dividend' and exceptional business opportunities (Brookings, 2019). The continent has a 1.2 billion-person market and is home to the world's largest free trade area - Africa is full of potential (The World Bank, 2019).

Yet at the same time, hunger, poverty, corruption, increasing debt insecurity, state fragility, as well as global climate crisis, still weigh heavily on the continent's shoulder. By 2030, the number of extreme poor will rise in 13 African countries, with SSA hosting 90 percent of the world's extreme poor (Brookings, 2019; World Bank, 2019). A PESTEL-Analysis can highlight the challenges of poor infrastructure, difficult regulatory and legal environments, political instability and lack of security on the developmental path for Africa.

How can Africa develop itself in the most sustainable way? How sustainable are the current development strategies placed on Africa by China, the US and Switzerland? The following management summary first explores the definition of sustainability, then provides an outline and a comparison of the three countries' approaches.

UN Sustainable Development Goals

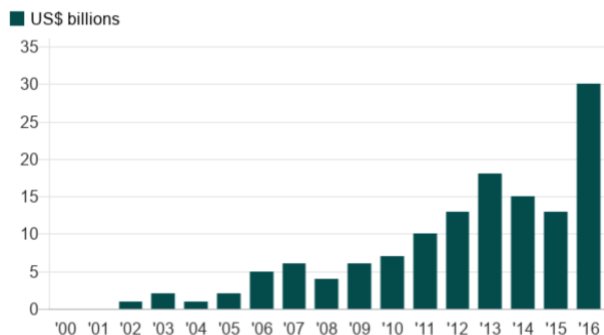
At the 2015 UN Summit, the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals were adopted. The 17 goals cover poverty, inequality, climate, environmental degradation, prosperity, and peace and justice - all are set to be achieved by 2030. According to the UN, sustainable development is such development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." The three core elements for it are *economic growth*, *social inclusion* and *environmental protection* (UN). We

will thus look at China, the US, and Switzerland's development strategies in Africa through such lenses.

The Chinese Approach

With the historical significance of African countries' support in helping the People's Republic of China (PRC) gain international legitimacy in the second half of the 20th century, the tie between China and Africa has much political depth. China and Africa are in a more similar stage in their historical development and established the Forum on China-Africa Cooperation (FOCAC) in 2000 to foster further South-South cooperation. Through FOCAC, China has launched plans that cover the fields of agriculture, transportation, medical care, natural resources and banking, expanding the volume of trade, investment, joint projects as well as other sorts of cooperation between the two (Executive Research Associates, 2009).

Annual Chinese loans to African governments (2000-2016)



Source: Johns Hopkins SAIS China-Africa Research Initiative

BBC

Chinese financing involvement in Africa includes grants, zero-interest loans, concessional loans, and credit lines – a closer look at the composition of China's \$60 billion pledge to Africa at the 2018 FOCAC Summit can reveal some worries and concerns of China's towards the return and viability of its financing in Africa (Sun, 2018). Indeed, there have been cases where loan payment failed to be met on time – e.g. the Addis Ababa-Djibouti railway in Ethiopia, in which case the loan payment period had to be extended from 10 years to 30 years.

There is evidence of diversification of Chinese investment in Africa – between 2008 and 2014, the correlation between Chinese incoming investment and the recipient country's natural resource reserve has declined - and an increase

in the number of African countries receiving Chinese investment (Brown, 2018).

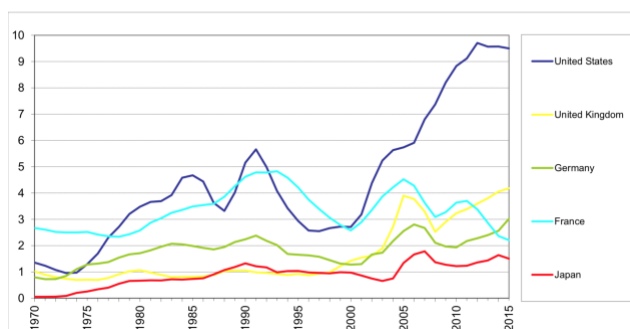
China's infrastructure projects in Africa include dams, power, ports, roads, water and sanitation - most significantly are power generation (especially hydropower) and transport (especially railroads), followed by ICT sector (mainly equipment supply) and only a few activities on water projects (Executive Research Associates, 2009).

Synergies between the state actions and Chinese private sector include the synergies at the Special Economic Zones (SEZs) in Africa, where Chinese private businesses enjoy various beneficial treatments and can piggyback on the state infrastructure construction, while the state gain more local leverage with the influx of Chinese firms. Yet the worry is how much benefit does local Africans get from such SEZs – does it create many more jobs for them, is there sufficient knowledge transfer, or does it reinforce inequality and harm local artisans' livelihood with the influx of cheap Chinese good?

The US Approach

The US has long been a significant aid donor to Africa in absolute terms, treating its relationship with the latter as a foreign assistance relationship historically for the most part (CSIS, 2019). 80% of the U.S. aid to Africa goes to health and humanitarian aids, with a strong focus on health and food security programs (CSIS, 2019; O Connell, 2017).

2.2.4. ODA to Africa by largest bilateral donors since 1970
USD billion, 2015 prices and exchange rates, 3-year average net bilateral disbursements



As the graph above from OECD has shown, there has been a big jump of US's Official Development Assistance (ODA) given to SSA since the beginning of the 21st century, reaching a peak of about USD 11.5 billion in 2017 (OECD, 2018). However, being the larger giver of ODA, the US still does not meet the UN goal of giving 0.7% of Gross National Income (GNI).

Going into the 21st century, the US has increased its engagement with Africa as material interests and geopolitical and security concerns keep on rising (Ryan, 2019). In 2019, US President

Trump initiated "Prosper Africa" programme to connect the vast consumer markets of Africa and the US, boosting two-way trade and investment between the two (ITA). It imagines American firms "bring[ing] significant capital, innovation, and proven solutions," while "adher[ing] to the highest standards of transparency, quality, and social responsibility," into Africa; it is an answer to US. firms' call for an easier access to the African market, as well as an adherence to the focus on security policy and economic interests for U.S. abroad as emphasized in the Joint Strategy Plan of the United States Agency for International Development (USAID) (ITA).

Some other U.S. development programmes in regards to Africa include The African Growth and Opportunity Act (AGOA) (enacted in 2000, renewed to 2025), Emergency Plan for AIDS Relief (PEPFAR) (launched in 2003), The Millennium Challenge Corporation (MCC) (established in 2004), and The Power Africa (launched in 2013).

The Swiss Approach

Switzerland's track record of neutrality, independence and humanitarian traditions, and its aim of "alleviating need and poverty in the world, while promoting respect for human rights and democracy, and contributing to the peaceful coexistence of peoples and the conservation of natural resources," signal its approach to Africa to be along certain humanitarian and value guidelines (FDFA). As an example, Switzerland's involvement focus in Southern Africa has mainly been food security under climate change – via improved seeds - and HIV/AIDS – via prevention, care and support (EDA). To implement its projects, Switzerland works with regional partners.

Between 2012 and 2015, Switzerland was an active member in drafting and negotiating the 2030 Agenda for Sustainable Development and has since its adoption been calling for systematic implementation of such rules and aspirations by all levels of the society (EDA). Such commitment then was strengthened by the State Secretariat for Economic Affairs (SECO)'s publication of economic development cooperation strategy for 2021 to 2024 – through 8 lines of action (*fiscal, financial and monetary policy, trade policy and system, business and investment environment, cities and public utilities, access to finance, sustainable value chains, entrepreneurship, and expertise in the digital revolution*), the 2021-2024 strategy targets reliable economic framework conditions and innovative private sector initiatives to achieve its overarching goal of

sustainable economic growth and social prosperity in partner countries (SECO). Its programmes and projects are to be considered long-term, and are required to systemically consider the environmental impacts, the sustainable use of resources as well as gender equality; it is supported by other organisations of the Swiss Federal Administration and encourages cooperation from the private sector (SECO). Switzerland's steady growth trend of its net ODA as well as its achiev-

Net ODA: Trends in volume and as a share of GNI, 1999-2015, Switzerland



Figure. Switzerland's Net ODA Statistics from the Development Co-operation Report 2016

-ement of UN's 0.7% GNI goal can be seen as one proof of its sound implementation of its principles.

Comparison

Economic growth. From the ODA front, it is obvious to see the different levels of commitment from the three countries – the US is still below the UN 0.7% GNI goal, its foreign aid expenditure dwarfed by its foreign policy priority of military spending (The Borgen Project); Switzerland is in good standing with the 0.7% goal; China does not report aid figures per the definition of OECD and mainly provides concessional loans for infrastructure and export credits (Habegger, 2015).

With Africa's growing debt amount – both domestic debt and public external debt – and debt's default potential, it is indeed necessary to stress on the importance of a careful evaluation prior to any deal. However, as the Brookings Institute has pointed out, "Development's future is finance, not foreign aid" – as loans encourage accountability on both ends of the table, while grants are based on charity – it encourages a more positive look on the role of loans and other sorts of alternative financing. Africa's urgent capital need for infrastructure building as well as all level of improvement on civil living standards means its open arm to any alternative financing besides the traditional Western aid. China's "no-strings-attached" principle behind its investments can also make itself arguably more respectful to

African countries' independence than the Western's value-attached models – however, strong emphasis on the African states' good negotiating skills as well as sound evaluation to ensuring plausible repayment plan is needed.

Social inclusion. It is important to ensure the knowledge and ownership transfer to the African countries in order for the latter to be independent and to run a sustainable system on their own. In this case, the Swiss approach of working with regional partners to foster regional dynamics and ownership is great. China is also striving well with its professional training programmes both in Africa and China for the African labour force, but the impact of its SEZs to the local labour and consumer markets still need further critical examination and/or improvement. The US stresses mainly on its security and own economic gains, with some emphasis on health and food security, but overall rather weak on the social inclusion aspect in comparison.

Environmental protection – an increasingly urgent point under the current global climate crisis. Switzerland has environmental concerns embedded in its 2021-2024 strategy and its overarching pursuit of the 2030 Agenda for Sustainable Development. The UN 2030 Agenda was also highlighted in 2018 FOCAC summit, alongside China's Belt and Road Initiative (BRI), the African Union's Agenda 2063, and the development strategies of individual African countries. No doubt that amidst the massive infrastructure plans of China in Africa, especially ones keen on natural resources, it is important to establish a more environmentally friendly system sooner than later. It can arguably also be asked to be an international endeavour, with countries with different expertise coming together to build Africa in the most efficient, effective and sustainable way possible. In comparison, the US again falls short on this regard, especially taking into account its exit from the 2015 Paris Agreement in 2017.

Conclusion

For any development strategy in Africa to be sustainable, it needs to be anchored to Africa's own capabilities. It needs to understand and best serves the continent's own specific characteristics, as well as that of each individual country. Any outside intervention should aim to inspire and build Africa's own capacity, upgrading its population's labour, production, and other system capacities, than coaxing dependence.

The development strategies from China, the US and Switzerland come from their own different

historical and political backgrounds and have their own strengths and specialties when serving Africa. However, at the end of the day, it is important for the African countries to take the lead in their own hands – e.g. via eliminating corruption and voting and gender inequalities, establishing and implementing effective legal mechanisms, etc. - to build up and strengthen a transparent, efficient and effective government and civil society.

Key References

The Borgen Project. Retrieved from <https://borgenproject.org/foreign-aid/>

Brookings. (2019). *Foresight Africa: Top priorities for the continent in 2019*.

Brown, H. (2018). *Chinese investment in Africa: New model for economic development or business as usual?*

Center For Strategic & International Studies (CSIS). (2019). *U.S. Economic Engagement In Africa - Making Prosper Africa A Reality*.

EDA. 2030 Agenda for Sustainable Development: The international process. Retrieved from <https://www.eda.admin.ch/agenda2030/en/home/internationale-ebene/internationaler-prozess.html>

EDA. *Swiss Development Cooperation in Southern Africa*. <https://www.eda.admin.ch/countries/zimbabwe/en/home/international-cooperation/swiss-development-cooperation-in-southern-africa.html>

Executive Research Associates (Pty) Ltd. (2009) *China In Africa: A Strategic Overview*.

FDFA. Foreign policy strategy and implementation. Retrieved from <https://www.eda.admin.ch/eda/en/fdfa/fdfa/implimenting-foreign-policy.html>

Gill, I. (2018). The end of aid. Retrieved from <https://www.brookings.edu/blog/future-development/2018/01/19/the-end-of-aid/>

Habegger, R. S. (2015). *Die Strategien der Entwicklungszusammenarbeit im Vergleich: China und die Schweiz auf dem afrikanischen Kontinent*.

ITA. Prosper Africa: A U.S. Government Trade and Investment Initiative. Retrieved from <https://www.trade.gov/prosperafrica/>

OECD. DAC member profile: Switzerland. Retrieved from <https://www.oecd.org/dac/switzerland.htm>

OECD. (2018). *Development Aid At A Glance: Statistics by Region. 2. Africa*.

Ryan, M. (2019). *'Enormous Opportunities' and 'Hot Frontiers': Sub-Saharan Africa in U.S. Grand Strategy, 2001- Present*.

SECO. SECO's objective 2021-2024. Retrieved from https://www.seco-cooperation.admin.ch/secocoop/en/home/strategy/focus/strategische_ausrichtung_2021-2024/Ziele-des-SECO-2021-2024.html

Sun, Y. (2018). China's 2018 financial commitments to Africa: Adjustment and recalibration. Retrieved from <https://www.brookings.edu/blog/africa-in-focus/2018/09/05/chinas-2018-financial-commitments-to-africa-adjustment-and-recalibration/>

United Nations. About the sustainable development goals. Retrieved from <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

United Nations. The sustainable development agenda. Retrieved from <https://www.un.org/sustainabledevelopment/development-agenda/>

United Nations. (2019). World population prospects 2019: highlights. Department of economic and social affairs.

UNCTAD. *Economic Development In Africa Report 2016 – Debt Dynamics And Development Finance In Africa*.

The World Bank. (2019). The World Bank In Africa. Retrieved from <https://www.worldbank.org/en/region/afr/overview>

Swiss, US and Chinese development strategies in Africa

Management Summary submitted by Oliver Kilchenmann

Out of the two billion people who may be added on our planet between 2019 and 2050, 1.05 billion are added to countries of Sub-Saharan Africa (SSA). Per the United Nations (UN) projections, the SSA population will more than triple from 1.06 billion people in 2019 to an astonishing number of 3.78 billion in 2100. (United Nations, 2019, p.6) The most important challenge for such a population growth will be providing proper schooling and health care as well as ensuring education and employment opportunities. Taking the reduction in fertility in the SSA region into account, the population at working ages is growing faster than other age groups, which is known as “demographic dividend”. According to the World Bank (2018), 90 percent of human beings that suffer from extreme poverty will be living in SSA by the year 2030.

The African market depicts some of the greatest opportunities in the developing world. The very high rates of economic growth and an expanding middle class offer significant business opportunities (CSIS, 2019, p.1). However, there are some very serious challenges that hinder its successful development which can be derived from the PESTEL-Analysis - Poor infrastructure, difficult regulatory, bad legal environments, political instability and lacking security - are only a few of those challenges.

The following management summary gives an insight into the different development strategies in Africa that are pursued by the United States, China and Switzerland.

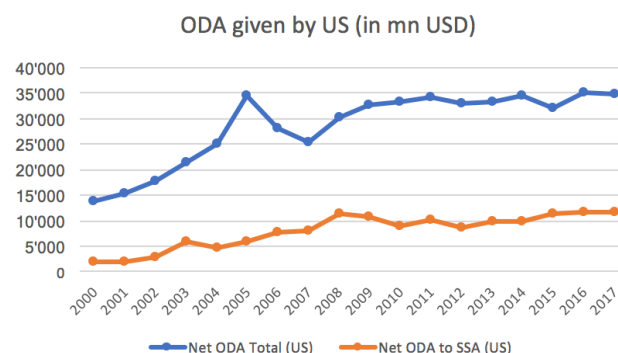
The birth of development aid and the U.S. development strategy in SSA

The inaugural speech of the re-elected U.S. President Harry S. Truman in 1949 is considered to be the birth of official development assistance. He called for the USA to support underdeveloped countries with financial and technical aid to fight poverty on its own. (Schweizerische Eidgenossenschaft, 2019, p.5)

After the Cold War period, when the competition for the future allegiance of the SSA countries ended, the United States withdrew from SSA and distanced itself from the region. However, the beginning of the 21st century had been a significant turnaround in the U.S. policy. The new US view

of SSA was driven by material interests, geopolitical and security considerations. (Ryan, 2019, p.1-2)

The U.S. is the largest donator of Official Development Assistance (ODA). However, it does not meet the UN goal of giving 0.7% of its Gross National Income (GNI).



Graph 1: US Official Development assistance (OECD, 2018)

Since the beginning of the 21st century the U.S. has a very strong presence in terms of development programs and foreign aid in SSA. Roughly one third (USD 11.5bn) of the ODA given by the U.S. in 2017 flows into SSA countries. In fact, of the top ten recipients of ODA six are in Africa (CSIS, 2019, p.8). Below there are listed some of the major U.S. initiatives since the 2000s in SSA (CSIS, 2019, p. 9–11):

- The African Growth and Opportunity Act (AGOA) enables SSA countries with a significant degree of duty-free access to U.S. markets.
- President George W. Bush’s Emergency Plan for AIDS Relief (PEPFAR) supports HIV testing services and assists in training healthcare workers to deliver HIV treatment and other health services.
- The Millennium Challenge Corporation (MCC) is an agency that competitively selects partner countries based on 17 different indicators to fund projects that are driven by partner countries.
- The Power Africa was launched with the goal to add more than 30,000 megawatts of an efficient generation capacity and build new home and business connections.

U.S. Africa Policy under Trump Administration

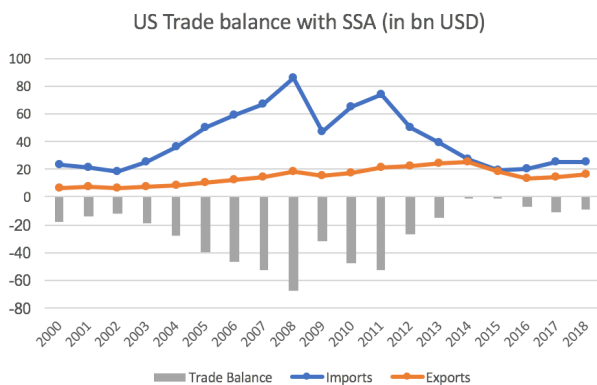
The Joint Strategy Plan of the United States Agency for International Development (USAID)

for 2018-2022 mainly focuses on security policy and economic interests of the U.S. abroad with the corresponding four goals (Konrad Adenauer Stiftung, 2019, p.3):

- Protect America’s Security Home and abroad;
- Renew America’s Competitive Advantage for Sustained Economic Growth and Job Creation;
- Promote American Leadership through Balanced Engagement;
- Ensure Effectiveness and Accountability to the American Taxpayer;

Accordingly, the new launched “Prosper Africa” initiative will support open markets for American businesses, grow Africa’s middle class, promote youth employment opportunities and improve the overall business climate. Furthermore, it will support efforts to counter threats to American and African security. The initiative also focuses on striving for stability, which includes the promotion for democratic ideals, support fiscal transparency and undertake economic reforms. (The White House, 2018)

The “Prosper Africa” initiative clearly focuses on boosting trade and investment between the U.S. and Africa. Consequently, the U.S. tries to benefit from its strong economic growth. With six of the ten fastest growing economies in the world and one billion consumers, Africa plays a crucial role in the global economy. (Prosper Africa, 2019)



Graph 2: US Trade balance with SSA (Census, 2019)

The graph above shows the imports and exports as well as the negative trade balance between the U.S. and SSA. The imports highly fluctuate over time and dramatically decrease from the all-time high in 2008 onwards. This sharp decline was due to the tremendous cut in crude oil imports from Nigeria and Angola (USITC Executive Briefing on Trade, 2015, p.1). In 2017 the U.S. exports to the SSA only accounted for 1.2% of all U.S. exports. This very low trading volume shows the huge potential of the SSA markets, an emerging middle class can bring with.

BUILD Act – Is the new US Africa strategy only about China?

“China uses bribes, opaque agreements, and the strategic use of debt to hold states in Africa captive to Beijing’s wishes and demands.” (John R. Bolton, 2018)

Through the Prosper Africa initiative the U.S. presents a compelling alternative to rivals like China. China has surpassed the U.S. as trading partner since 2009 and its two-way trade with Africa is approximately three times that of the U.S. Additionally, the Chinese foreign direct investment (FDI) flows were over ten times higher than the U.S. ones in 2017. (CSIS, 2019, p.6) Through the Prosper Africa initiative the U.S. presents a compelling alternative to rivals like China.

Looking at the newly passed Build Act (Better Utilization of Investment Leading to Development Act), creating a USD 60 billion agency, this is a clear response to China’s growing influence. The Build Act created the legal foundation for a new U.S. agency, the International Development Finance Corporation (USIDFC). By crowding in private investment, the agency will support developing countries to move from a non-market to market economies considering the emphasis towards U.S. assistance (CSIS, 2018). The agency can make loans and acquire equity stakes in entities as a minority investor (CSIS, 2018). In contrast to China the USIDFC offers something clearly different. China does not support any lending to small and medium-sized enterprises and only invests in large infrastructure projects. (CSIS, 2018).

The Chinese Development Strategy

Beginning in 1949, when the Communist Party came into power in the mainland, the UN did not recognize the People’s Republic of China as a sovereign state. Instead, the seat was held by Taiwan on the UN Security Council. In 1971 UN member states voted to return the seat to China. During that time 26 of 76 votes came from African nations and by the 1990s, approximately 90 percent of the African countries recognized the People’s Republic of China. Those relations founded the fertile ground for China’s “Going Out” policy, which was launched in 1999 to encourage Chinese enterprises to invest abroad. The link between China and Africa were further strengthened in 2000 through the launch of the Forum on China-Africa Cooperation (FOCAC). (McKinsey & Company, 2017, p.19)

The principle of non-conditionality of all Chinese aid payments is very essential in its development strategy, also known as the “no political strings attached” principle. No conditions are imposed with regard to democratic processes, the fight

against corruption or respect for human rights. (Habegger, 2015, p.5)

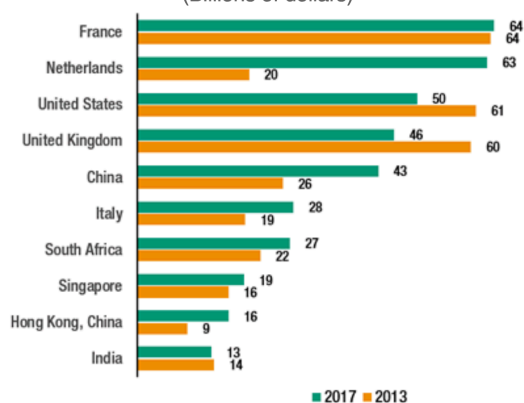
Generally Chinese Development Strategy in Africa is split into three different forms of financing:

- Grants; no pay back needed
- Interest-free loans; occur especially for infrastructure projects
- Concessional loans; preferred loans with special loan conditions

Since China does not report any aid figures per the definition of OECD, the numbers can be poorly compared with the numbers of the U.S. or the EU. However, in contrast to the U.S. and EU approach, Chinese aid is centered strongly on concessional loans for infrastructure and export credits. (Habegger, 2015, p.6) The financing of public institutions such as hospitals, schools or railway lines is mostly secured by raw materials, primarily oil. From an African point of view, oil production rights are preferably granted to those states that also invest in the country's infrastructure. This model, also known as the "Angola Model", involves an exchange of infrastructure and natural resources, preferably oil. (Habegger, 2015, p.6)

Estimates by the African Development Bank (AFDB) state that Africa's infrastructure requires an amount of USD 130 – 170 billion a year, leaving it with a financing gap in the range of USD 67.6 – 107.5 billion (CSIS, 2019). The Chinese President Xi Jinping pointed out that this infrastructure gap is Africa's biggest bottleneck to development. Since 2011, China is the biggest player in Africa's infrastructure boom, with a total share of 40%. China is not only being the largest investor in infrastructure projects on the continent but also Africa's biggest trade partner. (Shephard, 2019)

Top investor economies in Africa, 2013 and 2017
(Billions of dollars)



Graph 3: FDI stock in Africa (UNCTAD, 2019)

Per McKinsey & Company (2017, p.11), the Chinese investment and business activity leads to three main economic benefits: job creation and skills development, transfer of new technology

and knowledge as well as financing and development of infrastructure.

EU and Swiss Development Strategy

The EU Development policy has the objective to eradicate poverty, promote sustainable growth, defend human rights and democracy, promote gender equality, address environmental and climate challenges. The EU and its member nations are the world's largest donor of development aid amounting to EUR 74.4 billion in ODA. (Europäisches Parlament, 2019, p.1)

Switzerland became involved in ODA at an early stage. In addition to humanitarian programs, which it implemented from 1944 onwards in particular for war refugees, it soon also provided technical assistance. In 1947, Federal Councillor Max Petitpierre declared neutrality and solidarity to be fundamental principles of Swiss foreign policy. Following the development strategy of Switzerland (IZA), it addresses four objectives for the period 2021-2014 (Schweizerische Eidgenossenschaft, 2019, p.14):

1. Contributing to sustainable economic growth, market development and job creation (economic development);
2. Combat climate change and its impacts and manage natural resources sustainably (environment);
3. Saving lives, ensuring high-quality basic services and reducing the causes of forced migration and irregular migration (human development);
4. Promoting peace, the rule of law and gender equality (peace and governance)

Considering the priorities of the bilateral development cooperation, Switzerland distinguishes between stable and fragile countries in SSA. The priorities for the **stable** countries are economic development, good governance, strengthening the free movement of goods, services and people in the region to create local prospects as an alternative to emigrate to Europe as well as mobility and infrastructure. Regarding the **fragile** states, the priorities target a fair and basic supply such as health care, education, access to water and good governance, anti-corruption, conflict prevention and respect to human rights. (Schweizerische Eidgenossenschaft, 2019, p.21)

Comparison of US, Chinese and Swiss Development Strategy regarding sustainability

The recently developed "2030 Agenda for Sustainable Development" is anchored around 17 Sustainable Development Goals, which consider economic, social and ecological aspects.

The development strategies of the EU and Switzerland clearly stick to the sustainable development goals and actively include them in their development strategies. Switzerland does not state own strong economic interests in SSA in their development strategy 2021-2024. Unlike the Chinese or U.S. development strategy it states its goal to tackle the problem of forced and irregular migration from the SSA countries.

On the other hand, the U.S. strategy focuses very much on potential security threats to the U.S. and its economic interests abroad. Projecting American values and promote democratic ideals are central components. However, the new Africa strategy is clearly targeted to reposition itself and bring it on par with China. Since China has outpaced the U.S. in investment and as Africa's trading partner, preventing further loss in economic and political influence in African countries seems to be a crucial part of the new US – Africa strategy.

China's motivation is clearly focused on economic cooperation. Since it follows a non-interference policy, China invests regardless of democratic conditions and corruption. Further, human right violation and nature conservation are not targeted by the Chinese development strategy. As the Chinese strategy, does not cope with the UN sustainable goals at all, it however can tackle one of the most severe problem towards African successful development; its insufficient infrastructure.

Key References

Census. (2019). *United States Census Bureau*. Retrieved from <https://www.census.gov/foreign-trade/balance/c0019.html>

Center for Strategic & International Studies (CSIS). (12. October 2018). *The BUILD Act Has Passed: What's Next?* Retrieved from <https://www.csis.org/analysis/build-act-has-passed-whats-next>

Center for Strategic & International Studies (CSIS). (26. April 2019). *U.S. Economic Engagement in Africa - Making Prosper Africa a Reality*. Retrieved from <https://www.csis.org/analysis/us-economic-engagement-africa-making-prosper-africa-reality>

Congressional Research Service. (7. December 2018). *Sub-Saharan Africa: Key Issues and U.S. Engagement*. Retrieved from <https://fas.org/sqp/crs/row/R45428.pdf>

Europäisches Parlament. (2019). *Entwicklungspolitik: ein allgemeiner Überblick*. Retrieved from http://www.europarl.europa.eu/ftu/pdf/de/FTU_5.3.1.pdf

Habegger, R. S. (September 2015). *Die Strategien der Entwicklungszusammenarbeit im Vergleich: China und die Schweiz auf dem afrikanischen Kontinent*. Retrieved from https://www3.unifr.ch/federalism/en/assets/public/files/Working%20Paper%20online/10_Rahel_Sara_Habegger.pdf

Konrad Adenauer Stiftung. (2019). *Länderbericht - US-Entwicklungspolitik vor tiefgreifenden Reformen*. Retrieved from <https://www.kas.de/laenderberichte/detail/-/content/us-entwicklungspolitik-vor-tiefgreifenden-reformen>

McKinsey & Company. (2017). *Dance of the lions and dragons: How are Africa and China engaging, and how will the partnership evolve?*

OECD. (2018). *OECD.org*. Retrieved from <https://data.oecd.org/oda/net-oda.htm#indicator-chart>

Ryan, M. (2019). *'Enormous Opportunities' and 'Hot Frontiers': Sub-Saharan Africa in U.S. Grand Strategy, 2001- Present*. Retrieved from <https://www.tandfonline.com/doi/full/10.1080/07075332.2018.1529696>

Schweizerische Eidgenossenschaft. (2019). *Erläuternder Bericht zur internationalen Zusammenarbeit 2021-2024*. Retrieved from <https://www.news.admin.ch/news/message/attachments/56790.pdf>

Shepard, W. (3. October 2019). *Forbes: What China is really up to in Africa*. Retrieved from <https://www.forbes.com/sites/wadeshepard/2019/10/03/what-china-is-really-up-to-in-africa/#426856315930>

The White House. (13. December 2018). *Fact Sheet: President Donald J. Trump's Africa Strategy Advances Prosperity, Security, and Stability*. Retrieved from

<https://www.whitehouse.gov/briefings-statements/president-donald-j-trumps-africa-strategy-advances-prosperity-security-stability/>

UNCTAD. (12. June 2019). *Foreign direct investment to Africa defies global slump, rises 11%. Retrieved from* <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2109>

United Nations. (2019). *World Population Prospects 2019: Highlights. Retrieved from* https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf

USITC Executive Briefing on Trade. (July 2015). *Africa's Crude Petroleum Exports Declined Due to a Shrinking U.S. Market. Retrieved from* https://usitc.gov/publications/332/executive_briefings/ebot_africancrudeoilexportsforesoyangyuan7-6-15.pdf

Worldbank. (19. September 2018). *The number of extremely poor people continues to rise in Sub-Saharan Africa. Retrieved from* <http://blogs.worldbank.org/opendata/number-extremely-poor-people-continues-rise-sub-saharan-africa>

How sustainable are development strategies in Africa?

Compare the approach of China, Europe, the US and the 2021-2024 strategy of Switzerland.

Management Summary submitted by Andreas Seiler

There are many reasons to think about sustainable development aid. One could be that among the twenty largest recipients of development assistance, eleven are on the African continent (2017, Net official development assistance in % of GNI).¹ Or that on the basis of the GNI per capita of 2018, the twelve poorest countries can all be assigned to sub-Saharan Africa.² Considering these figures and the demographic development of Africa, the situation seems hopeless. In Figure 1, published in *The Economist* in 2018, Africa will have a population of 4.3 billion by 2100. Based on the current situation with about 1.3 billion people, this is a huge population increase that the African continent is facing. In an article by David Singer (NZZ, 2018) this process is described very aptly: "In addition, there is strong demographic growth, which often swallows up economic growth." The question of how sustainable and effective development is in Africa is justified from the point of view we have just seen. But what does sustainable development mean?

In this article, sustainable development is used according to the definition of the World Commission on Environment and Development (WCRD, 1987). It reads: "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*"³

More than 50 years ago, the international community began to pursue the goal of stifling poverty reduction and economic development in the affected regions. Among the drivers of this movement are the UN, the OECD and the World Bank. These committees define development goals for the benefit of these countries. Examples are the UN Millennium Development Goals (MDG, 2000) and the Sustainable Development Goals (SDG, 2015) based on them. In the report by Barclay et al. (2015), the authors describe the SDG as follows: "*The Sustainable Development Goals (SDGs) are a framework of 17 goals and 169 targets across social, economic and environmental areas of sustainable development, which United Nations*

(UN) Member States have committed to making a reality over the next 15 years."⁴

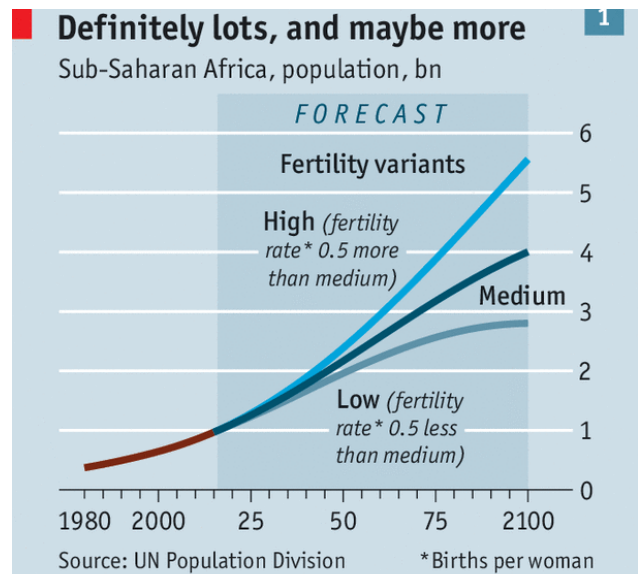


Figure 1: Overview of three possible scenarios for population growth in Africa⁵

Development strategies

Switzerland⁶

Switzerland's international cooperation (IZA) comprises humanitarian aid, development cooperation and activities to promote peace and human security. To this end, a strategic plan is drawn up every four years. Switzerland's development cooperation is to be given a stronger focus for the 2021-2024 strategy, which is intended to increase its impact. The objectives of the 2021-2024 strategy are to reduce poverty in the world, to respect human rights and democracy, and to preserve natural resources.

The new strategy comprises the creation of local jobs, the fight against climate change and the causes of irregular migration and forced migration, as well as a commitment to peace and the rule of law. In doing so, Switzerland is fundamentally guided by the needs of those affected and the interests of Switzerland. The aim is to create economic, political and social perspectives in the countries concerned. Switzerland's long-term goal is to address the root

¹ World Bank, https://data.worldbank.org/indicator/DT.ODAT.GN.ZS?most_recent_value_desc=true&view=map

² World Bank, https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD?most_recent_value_desc=false&view=map

³ Brundtland Report, World Commission on Environment and Development, WCRD, 1987

⁴ Barclay, H., Dattler, R., Lau, K., Abdelrhim, S., Marshall, A., & Feeney, L. (2015). Sustainable Development Goals: a SRHR CSO guide for national implementation.

⁵ Africa's high birth rate is keeping the continent poor; *The Economist*; 22. September 2018.

⁶ Vernehmlassung zur internationalen Zusammenarbeit 2021-2024, <https://www.eda.admin.ch/IZA2021-2024>

causes of irregular migration and forced migration, such as poverty, armed conflict, poor governance and the consequences of climate change.

In addition, SECO (State Secretariat for Economic Affairs) provides complementary measures. The focus here is on promoting economic development to create reliable framework conditions, give people and companies access to markets and opportunities and create jobs. In the long term, this will contribute to sustainable economic growth. The long-term approach takes climatic aspects into account and offers local people perspectives. In meeting these goals, Agenda 2030 for Sustainable Development is an important reference framework.⁷

Switzerland is providing CHF 11.37 billion (0.45% of GNI) for sustainable development. This sum is well below the UN target of 0.7%.

EU

The European Union has the long-term objective of ending poverty. The EU as a whole was the world's largest donor of Official Development Assistance (ODA) in 2018, with 74.4 billion euros. The EU's active involvement in the elaboration of the United Nations' Agenda 2030 for Sustainable Development has led the EU to focus on actions that can deliver the Agenda 2030. This also commits the EU to the target of spending 0.7% of its GNI on development aid, which is an integral part of Agenda 2030. In addition to the fight against poverty, which is the main objective of European development aid, the EU promotes human rights, democracy, the rule of law, good governance and broad and sustainable growth.⁸

The previous EU strategy to promote simple cash flow development has failed. For this reason, the new guidelines for European development policy should increasingly help the poorest states. The majority of short-term aid will be replaced by sustainable aid projects. These will create more jobs in the long term and ensure security of supply. The African states are to assume more responsibility than before.⁹ These goals are to be achieved through fair trade relations, faster industrialization and the creation of an appropriate infrastructure.¹⁰

⁷ Die wirtschaftliche Entwicklungszusammenarbeit der Schweiz: Für einen nachhaltigen Wohlstand, SECO, 13.05.2019

⁸ Europa Parlament, Entwicklungspolitik: Ein allgemeiner Überblick, 2019

⁹ Bernd Riegert, Neue Leitlinien für EU-Entwicklungspolitik, Deutsche Welle, 15.05.2017

Another very important point for Europe is to avoid further migratory movements and secure conditions for European investment capital. However, this line can only be achieved if the African community as a whole develops both economically and in accordance with the rule of law. In the interests of Africa, European investments should be managed in such a way as to create local value chains and boost the industrialization of African countries. This can also bring about the structural change that the African states urgently need.¹¹

United States¹²

The development strategy of the United States can be divided into four main objectives. The first objective is to protect American security at home and abroad. This includes, for example, combating terrorist organizations or instability that threatens national interests or the United States. The strengthening of citizen-oriented governance, security, democracy, human rights and the rule of law will help to combat these threats. The second goal is to renew America's competitive advantage in order to create sustainable economic growth and jobs. In particular, it seeks to open up markets. The aim is to promote integrative and sustainable development that opens up new markets. Furthermore, the fight against corruption and market-oriented economic and governance reforms will be particularly promoted. The third objective is: Promote American Leadership through Balanced Engagement. The aim is to turn aid recipients into permanent diplomatic, economic and security partners, taking American values and foreign policy goals into account. The final objective is to ensure effectiveness and accountability to the American taxpayer. It is about ensuring that development investments are effective and sustainable.

Through the potential attributed to the African continent, the US is pursuing the goal of expanding trade and investment. Africa can become a key market for US companies. The growth of the African middle class is to be accelerated, which will also give priority to employment opportunities for Africa's young people. Trade barriers are to be dismantled. In addition to the Joint Strategic Plan, the United States has had the African Growth and Opportunity Act (AGOA) since 2000.

¹⁰ Ama Lorenz, Die EU-Afrika Strategie – ein Ansporn für Entwicklung?, Euractiv, 15.01.2018

¹¹ Ama Lorenz, Die EU-Afrika Strategie – ein Ansporn für Entwicklung?, Euractiv, 15.01.2018

¹² Joint strategic plan FY 2018 – 2022, U.S. Department of State, U.S. Agency for International Development, 02.2018

As part of AGOA, African countries receive duty-free market access, which is intended to promote integrative economic growth and regional stability.¹³

In addition to economic goals, the USA also has political and military goals. For example, in reorganising Juan Guaidó as interim president of Venezuela, the USA hopes to support African countries. The USA also offers Africa military development assistance, with the aim that African governments can react to regional threats to peace and security.

In addition to these bilateral projects between the United States and Africa, the US government is also addressing China's development policy. In a speech by John J. Sullivan (Deputy secretary of State, 20.03.2019), African leaders were encouraged to choose sustainable foreign investment. He asked countries to align their relations with China with their ambitions for sustainable development and sovereignty.

The terms Agenda 2030 and SGD do not appear in the Joint Strategic Plan FY 2018 - 2022. It is difficult to estimate the extent to which Agenda 2030 will be supported and followed by the United States. However, the United States promotes prosperity, security and stability, which requires strong democratic institutions. Good governance and respect for human rights are central.

China

In the 70s China began to support infrastructure projects in Africa. The goals pursued can be divided into economic goals and political goals.

The main economic goals were to secure access to resources and technologies for the country's own economic development and to open up new markets. The African continent is rich in mineral resources such as oil, cobalt, manganese and copper, all of which are of great importance to the Chinese economy. Furthermore, Africa offers a market for products which do not meet the western quality standards.

The political goals were that China, which was often isolated from the West, was looking for partners in Africa to support China. This approach was particularly intended to ensure the non-recognition of Taiwan.

In Africa, China follows the "Five Principles for Peaceful Coexistence". These include non-interference in internal affairs, respect for sovereignty and territorial integrity, rejection of cross-border

aggression, equality and mutual advantage, and peaceful coexistence. Furthermore, China does not impose any conditions regarding democratization processes, the fight against corruption, respect for human rights, etc.

China's payments can be divided into three categories. Grants, "interest-free loans" and "concessional loans" (preferential loans with preferential interest rates). The latter are the most common form of concessional loans today and are linked to Chinese trade policy and secured by raw material supplies. China's pragmatic approach makes it very difficult to distinguish between trade and aid.

A positive aspect of China's approach is that economically weak states can quickly invest in the infrastructure projects they need and in this way the countries can grow economically quickly. In the long term, however, it is not a win-win situation. China operates independently of democratic conditions and corruption, which leads to large losses for African economies, especially in the raw materials sector. Furthermore, international standards do not play a role, which endangers the efforts towards "good governance". Human rights violations and nature conservation are also not an issue in Chinese Africa policy because of the lack of conditionality.

Comparison of the development strategies

First and foremost, we can state that neither Switzerland, nor China, nor the United States, nor the European Union is engaged in development aid as pure charity. All the strategies summarized in this article serve country-specific interests, although the degree of self-interest varies.

A big difference arises from the past. The colonization of Africa by Europeans is a significant historical event that still influences relations with Africa today. This, together with efforts to democratize political institutions and respect human rights, has led African countries to perceive cooperation with Europe and the United States as the relationship between different hierarchical levels. China is taking advantage of this by considering the African countries as partners at eye level and by mentioning on occasion that the Chinese sailors who entered Africa did not conquer and colonize the continent, which is interpreted as evidence of the peaceful and continuous relationship between China and Africa. The majority of African government circles welcome being seen as equal trading partners and Chinese engagement in Africa is rarely seen as neo-colonial,

¹³ At present, approx. 40 countries benefit from AGOA.

while European development aid, through its conditionality, is often seen as hypocritical arrogance and neo-colonial ideology.

With regard to Agenda 2030, it can be said that it is essential for the commitment of Europe. The US formulates its development aid largely independently of the SDGs, whereby no extreme contradictions to Agenda 2030 can be recognized and the US strategy is quite close to the SDGs. The situation regarding China is different. While they follow some points, there are mostly other approaches that cannot be combined with Agenda 2030.

Like the EU and the United States, Switzerland ties its aid to criteria. In contrast to China, these states reserve the right to take domestic aspects into account in their development cooperation. For example, Switzerland cooperates with autocratically or dictatorially led states only in the humanitarian field, while China acts independently of the political institutions on the basis of the five principles for peaceful coexistence, which include non-interference in internal affairs. China is not primarily interested in resolving conflicts and fighting poverty, but rather in pursuing its own interests. There are also considerable differences in human rights. In this respect, China, in the sense of non-interference, does not make any demands on the observance of human rights and participates itself in human rights violations or aiding and abetting them.

It is evident that the Chinese approach is far from Western in terms of poverty, sustainable development, respect for human rights and the rule of law.

There are still some differences, for example, the EU and Switzerland are pursuing the goal of curbing migration to Europe, which is intimidating due to the geographical location and events in the Mediterranean. Europe is also pursuing the goal of combating climate change. These two objectives are not pursued by the USA and China. In contrast to Europe and China, national security has a very high priority in the US strategy.

Unlike the Western strategies, China does not clearly differentiate its engagement in Africa. Trade and aid merge. China's strategy is much more pragmatic than that of Western countries. While the western approach also includes the idea of solidarity, the Chinese approach is far less altruistic and more business-like.

Conclusion

Basically, the question can be asked whether sustainable development aid has any benefit at all for Africa. Does international development policy provide the right incentives? Economists Paul Rosenstein-Rodan and Gunnar Myrdal are regarded as the inventors of development aid. They argued that self-reinforcing polarization effects would increase the disadvantages of a region and lead to irreversible imbalances in the world. The developing countries are too weak to free themselves from poverty. On the other hand, Peter T. Bauer sees no need to protect developing countries' industries from foreign countries, as protectionist measures lead to inefficient market outcomes. According to Bauer, a successful development policy should therefore be based on a liberal trade policy. Like Bauer, Dambisa Moyo agrees. In her book "Dead Aid" she calls development aid "the single worst decision of modern development politics". For development aid leads to financial dependence and the ruling elites in the country are strengthened.¹⁴

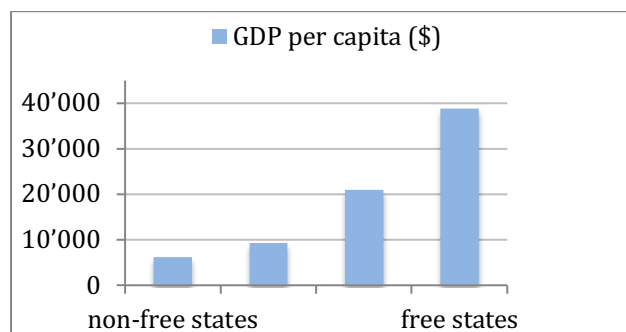


Figure 2: GDP per capita from free and unfree states.

The great success of development aid in Africa has so far failed to materialize. Empirical meta-analyses, which include the results of more than 100 empirical studies in their estimates, show that development aid has no statistically significant effect on the recipient countries' economic growth (Doucouliagos and Paldam, 2009 and 2014). Isolated studies concluded that development aid could achieve at least some economic success when linked to institutional reforms. (Burnside and Dollar, 2000). Daron Acemoglu and James A. Robinson already write in their book "Why Nations fail" about the 'inclusive economic institutions' that drive development, while 'extractive economic institutions' allow short-term gains but increase poverty in the long run. This statement about how important institutional structures are for a country's economic development is documented every year by the

¹⁴ Moyo, D. (2009), *Dead Aid: Why Aid Is Not Working and How There is another Way for Africa*, London: Allen Lane.

Economic Freedom of the World Index of the Fraser Institute (Figure 2).

Note by the author

In this section I would like to address some points of criticism and raise some questions. In his book "The Rift: A New Africa Breaks Free" Alex Perry writes about the humanitarian crisis in Somalia during the year 2011. He writes that due to the American legal situation, almost all American food aid grew on American fields, ran through American factories and was on American ships. It described this as charitable disguised commerce. But much more drastic is the second situation he describes. A meeting at which he is told that the distribution of aid has been blocked by the USA in order to weaken the terrorist organization al-Shabaab. The enormous famine in 2011 was a consequence of this. A partial instrumentalization of development aid is justified. It will be difficult to convince a people that "giving away" taxpayers money makes sense. It needs a certain benefit to justify development aid. But at the latest with humanitarian aid the instrumentalization should stop, it must not be misappropriated and used for political interests.

Western countries should stop using carrots and sticks to impose the Western view of the world on African countries. The current situation is extremely critical. China is increasingly assuming the leading role on the African continent. If the West does not want to miss the train completely, it will have to make compromises. In this way, economic and political structures can be broken up in the long term. It is extremely dangerous to impose this structural change by force. In the ZDF documentary "China's Reach for Africa" Helmut Gauß said: "*The train is already running and if we don't jump on it, we will lose the connection. Africa will certainly turn to the markets where they do business, where they are recognized as sovereign people and sovereign states and where their decisions are not constantly corrected or criticized by Europe*". Africa has a desire for self-determination and this Western approach will only drive it further into China's hands. Erich Reidel expressed himself as follows: "*Europe is oversleeping and has not yet understood the huge challenge that has arisen with the new China policy.*"

Human rights are a great achievement of our civilization and they should apply to everyone. All development aid must respect human rights. However, that there is no need for conditions beyond that to operate development aid. Africa does not need forced democracy. Africa needs good partners instead of supervisors. If the West,

provides Africa Western technology and Western know-how, and the United States and Europe become the most important and accepted partners, then Africa will automatically move closer to the West. Without compulsion, on its own and sustainably.

The Chinese approach of staying out of internal affairs seems noble, but to use it only so that human rights can be violated and so that one can cleanse oneself, is extremely cowardly and hypocritical.

Key References

- Assembly, G. (2015). sustainable Development goals. SDGs), Transforming our world: the, 2030.
- Barclay, H., Dattler, R., Lau, K., Abdelrhim, S., Marshall, A., & Feeney, L. (2015). Sustainable Development Goals: a SRHR CSO guide for national implementation.
- Cobbinah, P. B., Erdiaw-Kwasie, M. O., & Amoateng, P. (2015). Africa's urbanisation: Implications for sustainable development. *Cities*, 47, 62-72.
- Copper J. F. (1976). *China's Foreign Aid – An Instrument of Peking's Foreign Policy*, London.
- UES THOMAS/GRIMM SVEN/LAUFER DENISE, *Chinas Afrikapolitik: Chance und Herausforderung für die europäische Entwicklungszusammenarbeit*,
- Habegger, R. S. (2015). *Die Strategien der Entwicklungszusammenarbeit im Vergleich*.
- Lorenz S, (2013). *Chinesische und westliche Entwicklungshilfe in Afrika im Vergleich: Cui bono?*, Hamburg.
- König, J. (2015). *Hilflose Entwicklungshilfe?* (No. 128). *Argumente zu Marktwirtschaft und Politik*, Stiftung Marktwirtschaft.
- Robert, K. W., Parris, T. M., & Leiserowitz, A. A. (2005). What is sustainable development? Goals, indicators, values, and practice. *Environment: science and policy for sustainable development*, 47(3), 8-21.
- Sieren A., Sieren F., *Der Afrika-Boom – Die grosse Überraschung des 21. Jahrhunderts*, München 2015.
- Sneddon, C., Howarth, R. B., & Norgaard, R. B. (2006). Sustainable development in a post-Brundtland world. *Ecological economics*, 57(2), 253-268.

U.S. Department of State, U.S. Agency for International Development, Joint strategic plan, 02.2018

The Economist, Africa's high birth rate is keeping the continent poor, 22. September 2018

Canada: Critically review how this country manages migration. What are the lessons for other countries?

A critical review of the impacts of the Canadian immigration system
Management Summary submitted by Isabel Bayer

Introduction

According to the European Commission, the significance of migration has increased globally in the past decades (European Commission, n.d.). Looking at Canada especially immigration is playing a fundamental role as the demographic composition is going to change drastically. Thus, it is expected that 23% of the population is going to be 65 years old and above by 2035. Further, Canada's fertility rate amounts to 1.6 children per woman occupying rank 180 in the global country comparison. As the North American country is trying to counteract these dramatic changes, immigrants currently account for 65% of the net annual population growth and it is expected that this percentage rate rises in the following years. (Central Intelligence Agency, 2019); (The Conference Board of Canada, 2019)

In terms of organization, the Canadian immigration system is often referred to as a role model for the world. Hence, this management summary aims at critically reviewing the Canadian immigration system by analyzing economic consequences, impacts on the Canadian society and the immigrant. The three categories have thereby been selected based on the structure of the ANNUAL REPORT to Parliament on Immigration 2018 (Hussen, 2018) as well as the clusters identified in ten surveys filled out by Canadians or international students at Canadian universities.

Public perception

Before evaluating the impacts on these three categories from an objective perspective, it is worthwhile looking at the public perception towards immigration in order to build a basis for the analysis. According to the Environics Institute for Survey Research (2019) Canadians currently do not perceive immigration and refugees as a big problem in their country and have a very welcoming attitude towards immigrants. Also, they value the positive impacts on the economy, however, they for instance have diverging opinions with regards to the caused strain on the welfare system or the level of adoption to Canadian values (Environics Institute for Survey Research, 2019).

The economic perspective

"Without growth in the workforce, and a declining number of people in the labour force, it's going to create labour shortages, and it's going to affect economic growth," said Parisa Mahboubi who is a senior analyst at the C.D. Howe Institute, a nonprofit policy research organization in Toronto (Friedman, 2019).

Considering this statement, the OECD (2019) found that in 2016 immigrants accounted for 24% of the Canadian labour force. Furthermore, looking at the future, the Conference Board of Canada identified "that between 2018 and 2040, the expected 11.8 million school leavers who enter the labour market will be significantly below about 13.4 million workers exiting the labour force" (OECD, 2019). Resultingly, immigration is required to counteract labour market shortages due to low fertility rates and the aging population.

Another positive aspect is that immigration leads to a bigger availability of high-educated job seekers as 60% of the foreign-born people have completed a tertiary education (OECD, 2019).

Furthermore, immigration tends to foster international trade as Canada is home to people with many different nationalities who maintain relations to their home countries and establish commercial relationships with their nations of origin.

Additionally, immigrants contribute to an increase of the GDP as they have to pay taxes and spend money within the country (Hussen, 2018).

Lastly, it can be assumed that some of the Business Migration Programs such as the Entrepreneur and Investor programs foster entrepreneurship and innovation in the North American country.

Despite of these positive implications on the economy, it is substantial to notice that the labour force growth rate is declining (figure 1). According to recent research of Cocolakis-Wormstall (2019) already today 40% of the SMEs are having difficulties in finding new suitable workers.

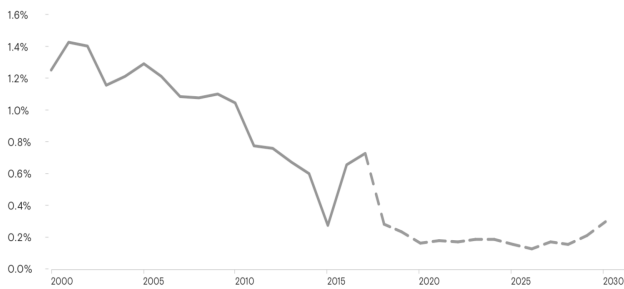


Figure 1: Canada's labour force growth rate (Cocolakis-Wormstall, 2019)

This problem is even more severe in the high-skilled labour market especially in professions in the health care or science sector. Further, the severity of the issue is underlined by data predicting that 76% of the employment growth over the next ten years is expected to be in high-skill occupations (OECD, 2019).

Impacts on the society

Looking at the impacts of immigration on the Canadian society, it is worth mentioning that Canada is a settlement country or a "mosaic of cultures" as one of the Canadian interview partners described it. Immigration has shaped the country since many decades and has contributed to the country's cultural richness and diversity. Being a country with a population share of 22% non-native-born people, the culture is marked by a higher level of openness and inclusion as well as less discrimination, prejudice, racism or nationalistic behavior (OECD, 2019).

Additionally, Canada benefits through more social engagement as in 2016 32% of the immigrants volunteered and 61% were members of social organizations (Hussen, 2018).

Considering that the majority of the population is living close to the American boarder and four out of five Canadians live in a metropolitan area, another advantage of immigration with regards to society is the possibility of targeted settlement (StatCan, 2008). Hence, this chance is especially relevant for rural areas and, as can be extracted from figure 2, the targeted settlement measures have achieved an initial success.

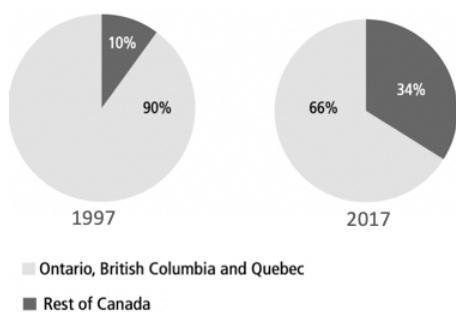


Figure 2: Destinations of immigrants across Canada (Hussen, 2019)

In defiance of these positive effects, there are several disadvantages of immigration in the context of society.

First, reconsidering the targeted settlement, it has to be noted that there is no obligation for immigrants to stay at the initial place. Resultingly, certain areas are marked by a high concentration of migrants. In 2017 61% of the immigrants were settling in Toronto, Montréal and Vancouver. Notably is further that immigrants have a stronger tendency to concentrate in specific regions than native-born Canadians. (Hussen, 2018)

Additionally, being a melting pot of many different cultures can also lead to dilution of the Canadian identity and a missing national culture as can be deduced from the surveys.

Important to mention are, on top of that, the threats to national security caused by immigration. As a consequence of too many immigrants, immigration officers are unable to "adequately screen every newcomer" (Sole, 2015). In addition, many people are arriving in Canada without identification papers. Hence, there is a high risk of criminals entering the North American country. According to different security and police experts Canada is the base of approximately 50 terrorist groups (McMahon, n.d.).

Apart from the danger through criminals, there is the threat that people only come to Canada in order to abuse the Canadian social system (Sole, 2015). Accordingly, they might unjustifiably benefit from the medical or education system.

The immigrant's point of view

Since the immigration system is very much influencing the wellbeing of immigrants, it is worthwhile reflecting upon the consequences for this stakeholder group.

To start with, Canada is a very welcoming country offering immigrants prosperous perspectives. In this context, the provided standard of living and as well as the good public system have to be positively accentuated. The U.S.News in cooperation with the BAV Group and the Wharton School of the University of Pennsylvania have ranked Canada as the third best country of 2019 behind Switzerland and Japan. The ranking thereby compares 80 nations worldwide based on 65 country attributes. More precisely the position table evaluates "how global perceptions define countries in terms of a number of qualitative characteristics, impressions that have the potential to drive trade, travel and investment and directly affect national economies". (McPhillips, 2019)

Another important aspect with regards to the immigrant is that Canada is a country of multiculturalism which is proud of its history and its diversity. This can be deduced from Justin Trudeau's statement that Canada has "no core identity, no mainstream" as well as from several of the conducted surveys (Foran, 2017). Hence, immigrants are able to preserve their own culture and traditions even though they are living in Canada.

However, there are also good integration possibilities offered by the nation, looking for instance at the governmental Settlement Program. The integration is further simplified as the Canadians are very accommodatingly towards new people. This view is supported by the Migrant Integration Policy Index 2015 ranking the country 6 out of a comparison of 38 nations (MIPEX, 2015). Moreover, according to the 2013 General Social Survey, 93% of the immigrants have a strong sense of belonging to Canada which is underpinning the success of the integration measures (Hussen, 2018).

Furthermore, looking at the positive financial impacts, economic immigrants living in the North American country for at least 5 years exceeded Canadian average earnings by 6% (Hussen, 2018).

Nevertheless, considering the negative impacts of immigration in the context of financial means, it has to be noted that the majority of the immigrants have a lower income and that they are facing a slightly higher unemployment rate than native-borns (Cocolakis-Wormstall, 2018).

Another negative financial factor is that immigrants might not be able to disburse the application fees for permanent residence. For the programs under the Express Entry system a single application fee amounts to \$1,040, which might not be payable for poor immigrants (Government of Canada, 2019).

Apart from the financial factors, it is essential to be aware that Canada is very restrictive with regards to visa rules despite being famous for its welcoming attitude. This becomes clear by looking at the World Economic Forum's survey of travel and tourism professionals which ranked Canada on rank 120 out of 136 countries for the restrictiveness of its visitor visa requirements. Furthermore, the country is also very constrained with regards to the countries of origin of the applicants. In 2017 for instance 75% of visa applicants from countries such as Somalia, Yemen, Afghanistan, and Syria were denied (Keller, 2018).

Moreover, as mentioned before, Canada has placed a very strong focus on fostering skilled-labour immigration. Considering this point from the opposite perspective, one could further draw the conclusion that lower educated immigrants have less chances of being accepted to the country even though they might be of great value.

Conclusion

"[Immigration] is one of the things that made Canada great and that is one of the things that is going to be an incredible advantage for us in the world. We have a population that is aging, we need people to arrive with their talents, with their hopes, with their dreams, with their capacities to work, to build our communities, to build our futures"

Justin Trudeau, 2019 (CTV News, 2019)

Reconsidering the impacts of the immigration system on the economy, the Canadian society and the immigrant, the overall conclusion that immigration has not only shaped Canada in the past but is also an indispensable part of the future can be drawn. Resultingly, one can infer that the immigration system of Canada is successful.

With regards to the economy, immigration is especially necessary as labour market shortages can be reduced and high-skilled labour can be attracted. However, immigration does not entirely solve the severe consequences of an aging population and a low fertility rate.

Regarding the effects on the Canadian society, immigration has formed Canada into a cultural melting pot characterized by a remarkable level of openness and inclusion. Nevertheless, immigration also puts pressure on the national social and security systems and might cause the feeling of a missing Canadian identity.

With respect to the consequences for the immigrants, the conclusion that Canada is offering immigrants prosperous living conditions can be reached. Despite this, it is substantial to state that the country does not pursue an open boarder policy and is very restrictive with regards to applications.

Key References

- Environics Institute for Survey Research. (2019). *Focus Canada – Spring 2019: Canadian public opinion about immigration and refugees*. Retrieved from https://www.environicsinstitute.org/docs/default-source/project-documents/focus-canada-spring-2019/environics-institute--focus-canada-spring-2019-survey-on-immigration-and-refugees---final-report.pdf?sfvrsn=8dd2597f_2
- Central Intelligence Agency. (2019). *The World Factbook*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/ca.html>
- Cocolakis-Wormstall, M. (2018). *Labour Shortage: Here to Stay*. Retrieved from Business Development Bank of Canada: https://www.bdc.ca/en/documents/analysis_research/labour-shortage.pdf
- CTV News. (2019). *Justin Trudeau: 'Canada's a country that was built by immigration'*. Retrieved from youtube : <https://www.youtube.com/watch?v=tTIIANhprOk>
- European Commission. (n.d.). *Increasing significance of migration*. Retrieved from https://ec.europa.eu/knowledge4policy/foresight/topic/increasing-significance-migration_en
- Foran, C. (2017). *The Canada experiment: is this the world's first 'postnational' country?* Retrieved from The Guardian : <https://www.theguardian.com/world/2017/jan/04/the-canada-experiment-is-this-the-worlds-first-postnational-country>
- Friedman, G. (2019). *All the reasons why Canada needs immigration — and more of it*. Retrieved from Financial Post: <https://business.financialpost.com/news/economy/all-the-reasons-why-canada-needs-immigration-and-more-of-it>
- Government of Canada. (2019). *Apply for permanent residence: Express Entry*. Retrieved from <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/apply-permanent-residence.html>
- Hussen, A. (2018). *ANNUAL REPORT to Parliament on Immigration 2018*. Retrieved from <https://www.canada.ca/content/dam/ircc/migration/ircc/english/pdf/pub/annual-report-2018.pdf>
- Keller, T. (2018). *Canada Has Its Own Ways of Keeping Out Unwanted Immigrants*. Retrieved from The Atlantic : <https://www.theatlantic.com/ideas/archive/2018/07/canada-immigration-success/564944/>
- McMahon, F. (n.d.). *Canada's Immigration System Deeply Flawed*. Retrieved from Fraser Institute: <https://www.fraserinstitute.org/article/canadas-immigration-system-deeply-flawed>
- McPhillips, D. (2019). *Methodology: How the 2019 Best Countries Were Ranked*. Retrieved from U.S.News: <https://www.usnews.com/news/best-countries/articles/methodology>
- MIPEX . (2015). *Canada*. Retrieved from Migrant Integration Policy Index 2015: <http://www.mipex.eu/canada>
- OECD. (2019). *Recruiting Immigrant Workers: Canada 2019*. Retrieved from OECD iLibrary: <https://www.oecd-ilibrary.org/sites/184a3868-en/index.html?itemId=/content/component/184a3868-en&mimeType=text/html>
- Sole, J. (2015). Under the Microscope: Abuse of Canada's Immigration and Refugee Determination System. *Counter Terrorist Trends and Analyses*, 7(5), pp. 4-9.
- StatCan. (2008). *Provinces and regions*. Retrieved from Statistics Canada: <https://www150.statcan.gc.ca/n1/pub/91-003-x/2007001/4129908-eng.htm>
- The Conference Board of Canada . (2019). *Why is immigration important to Canada?* . Retrieved from <https://www.conferenceboard.ca/infographics/import-immigration.aspx>

A comparison of immigration in Canada and Germany with a focus on the public opinion in immigration

Management Summary submitted by Anna-Katharina Kölbl

Introduction

The Canadian migration model serves as a frequent best practice reference in German policy debates on immigration management. Due to its renowned point system to evaluate immigrants, the Canadian model is presumed to be highly effective in terms of managing policy targets by selecting the right quantity and quality of immigrants (Meardi, Martín-Artiles, & Van den Berg, 2016, p. 101). Especially after the financial crisis and the labor market adjustment measures in 2010, various German newspapers published articles on the Canadian immigration model. Citing the Canadian migration economist Govind Rao, Frankfurter Allgemeine Zeitung states: "Canada is the only country in the world where the majority of the population views immigration positively" (Mihm, 2010, p. 1).

Nine years later, with Germany experiencing more and more radical immigration opponents and vocal protests (e.g., social movements like PEGIDA), the Canadian immigration model is again in the focus of public discussions (Slater, 2015, n. p.). But how different are Canada and Germany with respect to immigration and are there measurable differences between the two countries in the public opinion on immigration?

Immigration in Canada and Germany – Evolution and Status Quo

Canada

History and Evolution. Canada is frequently described as "the land of immigrants" because of its long immigration history, starting with the first European settlement in 1604. Since then, millions of migrants from all over the world have settled in Canada and shaped the country's culture and society. Today, Canada still remains the number one country for immigrants in 2018 and often serves as a role model in international comparisons (U.S. News, 2018, n. p.). One important milestone in Canada's immigration history can be found in 1962, when the country shifted its immigrant admission guidelines from factors like origin, race and religion to skill, education and work experience. These changes were accompanied by the introduction of a new visa class for skilled immigrants and the first in history immigration point system, which allowed to select suitable immigration candidates based on certain criteria (e.g., language proficiency, education). In

result, Canada became very effective in selecting skilled immigrants to benefit its economy (Grubel, 2018, p. 3).

Status Quo. In its current form, the Canadian immigration system has the following basic features. The government releases its immigration levels plan, which specifies the number of immigrants annually. In order to tackle the low fertility and the aging population structure, these immigration targets increased from 300,000 in 2017, to 330,800 in 2019. (Government of Canada, 2018, n. p.). The immigrants are then selected from a large pool of applicants, who get granted admission according to four different categories: Economic, Family, Refugees and Other (see Figure 1). Whereby the largest category comprises economic immigrants with a total of 56% (Statista, 2017, p. 14). The Immigration Levels Plan and the communication and adherence to immigration targets allow the Canadian system to signal control over the migration inflows. As a result, only 3% of Canadians perceive immigration as an important issue of the country (Environics Institute for Survey Research, 2019, p. 3).

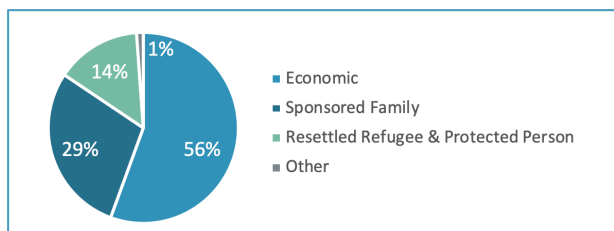


Figure 1: Immigration to Canada according to categories in 2017, Source: Statista (2017)

Germany

History and Evolution. Historically, immigration in Germany has been highly affected by political events like World War II. As a result, net immigration to Germany only took off in the 1950s and immigration policies in the early years have been strongly influenced by social and cultural factors as opposed to economic rationalities (Meardi et al., 2016, p. 113). Due to a labor shortage after World War II and the economic post-war boom, the German government initiated a "guest workers" scheme in the 50s and 60s targeting low-skilled workers from especially Italy, Spain and Turkey (Federal Office for Migration and Refugees, 2005, p. 13). In the beginning of the 1970s the unemployment rate was rising, but the assumption that the "guest workers" will leave when

no longer required by the labor market turned out to be false and they settled permanently after the “Anwerbestopp” was announced in 1973 (Federal Office for Migration and Refugees, 2005, p. 47). These early years of immigration until the 1980s were described by rather liberal immigration policies as a human-rights-based reaction to former times of Nazism (Meardi et al., 2016, p. 113).

A paradigm shift towards a more economic and labor demand driven immigration policy focus occurred in 2000, when the government tried to institutionalize immigration and increase the amount of highly skilled immigrants with the reform of the Nationality Act. These initiatives marked an important turning point in the German immigration history proclaiming a perception shift from “Germany is not an immigration country” to “Germany needs immigration” (Federal Office for Migration and Refugees, 2005, p. 16).

Status Quo. As member state of the European Union, Germany follows the EU free movement of workers principle, which allows EU citizens to reside in another member country of the EU and look for job opportunities (EU Commission, 2019, n. p.). In 2018, 634,836 people from EU member countries entered Germany (Bundesamt für Migration und Flüchtlinge, 2018a, p. 3). Next to EU citizens, Germany grants residence titles to third country nationals, who fall into one of the following categories: Immigration for education, for employment, for humanitarian or political reasons, for family reunions and other (see Figure 2). In 2017, Germany granted at total of 1,221,091 residence titles with the largest share of 37% granted to humanitarian or political migrants (Bundesamt für Migration und Flüchtlinge, 2018b, p. 22). In contrast du Canada, immigration of skilled workers has been historically low in Germany. In 2017, it comprised only around 28,000 people (Federal Ministry of the interior, Building and Community, 2017, n. p). In order to attract qualified migrants, a “Skilled Immigration Act” got introduced and will enter into force in early 2020 (Federal Foreign Office, 2019, n. p.). Among other factors the new act includes faster recognition of degrees, improved administrative procedures and support for language programs. Society-wise, a fear of transformation of the German ethnicity arouse in the mid-2000s, which fueled a debate on culture, citizenship and asylum. This debate got reinforced through the recent inflows of refugees in 2015 (Institut für Arbeitsmarkt- und Berufsforschung, 2015, p. 2)

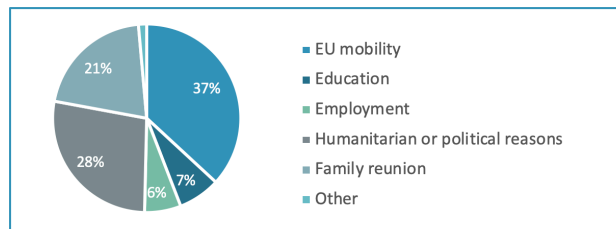


Figure 2: Immigration to Germany according to categories in 2017, Source: Bundesamt für Migration und Flüchtlinge, 2018a & 2018b.

A Comparison of the Public Opinion on Immigration in Canada and Germany

To assess the public opinion on immigration, aggregated data was drawn from the Bertelsmann Stiftung (2019), which used survey data on Canada from the Environics Institute for Survey Research (2019) and on Germany from Kantar Emnid (2019).

General Evaluation of Immigration. The general evaluation of immigration among the Canadian population is much more positive than among the German population. Only around 35% of Canadians believe that there is too much immigration, whereas 52% of Germans have this impression. This comprises a substantial difference of 17 percentage points in the overall perception of immigration in terms of total numbers. With respect to the economic impact, 77% of Canadians believe in the positive effect of immigration on the economy. In Germany, only 65% of the population perceive the economic impact as positive. Even more discrepancy can be found in the assessment of the work ethic of immigrants. More than half of the Canadians (53%) believe that immigrants work harder than locals. In contrast only around a fourth of the German population (29%) share this opinion. Similarities between the two countries can be found in the perceived degree to which immigrants adopt local values. Both Canadians and Germans consider the degree of adoption to be too little and see room for improvement in this category. 63% of Germans and 51% of Canadians indicate that they believe that too many immigrants don't adopt the local values (see Figure 3).

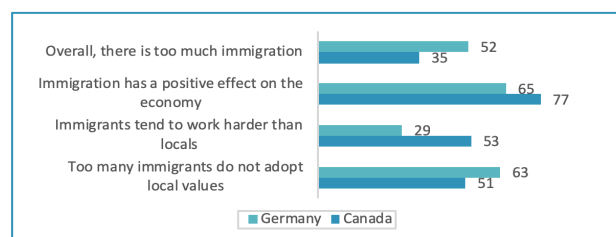


Figure 3: General Evaluation of Immigration (in %), Source: Bertelsmann Stiftung (2019).

Overall Attitude towards Welcoming Immigrants. Canada is known as “the land of immigrants”. As a result, it is unsurprising that 87% of Canadians consider local agencies to be very welcoming. In Germany 79% feel the same way. A bigger difference can be found in the perceived attitude of the population: 82% of Canadians and 71% of Germans perceive an openness towards immigrants. When it comes to the mindset towards refugees, who comprise the largest group of third-country immigrants in Germany, a substantial difference between the countries can be found. In Canada 76% of survey participants state the population to be welcoming towards refugees, whereas in Germany only 56% share this perception. Similarly, 81% of Canadians and 71% of Germans consider public authorities to be welcoming towards immigrants (see Figure 4).

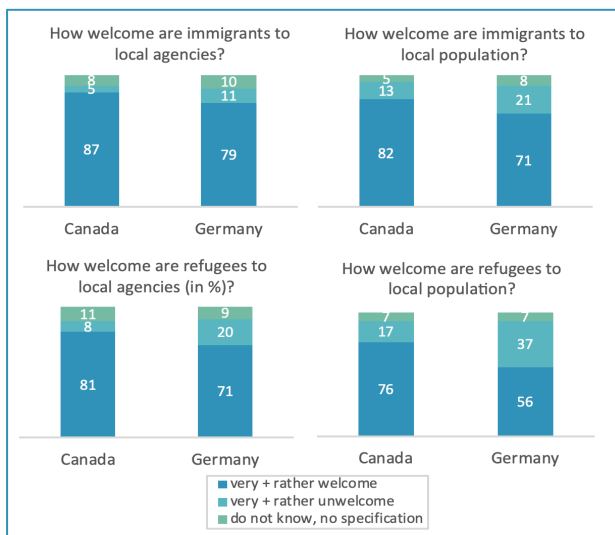


Figure 4: Overall Attitude towards Welcoming Immigrants and Refugees (in %), Source: Bertelsmann Stiftung (2019).

Perceived Effects of Immigration on Country. The great difference in the welcoming attitude towards immigrants in Canada and Germany also resembles in the assessment of the general influence of immigration on the country. More than twice as many Canadians (44%) as Germans (17%) consider the impact of immigrants on shaping the country to be very positive. Contrary, only a small share of the population in Germany (20%) and Canada (15%) perceive the impact of immigration to be negative. A large portion of Germans feels indifferent towards the impact of immigration and state that Germany is not shaped by immigration at all. This may strengthen the thesis that Germans do not perceive their country to be highly impacted by immigration. In contrast, Canadians appear to be very open-minded and consider immigration to be an important part of their national identity (see Figure 5).

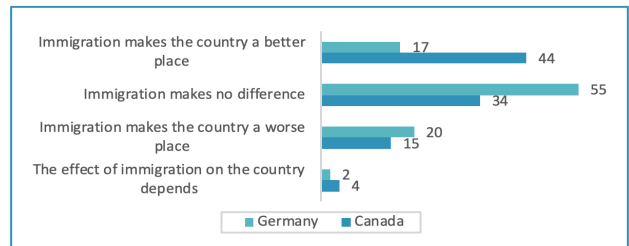


Figure 5: Perceived Effects of Immigration on Country (in %), Source: Bertelsmann Stiftung (2019).

Conclusion

In direct comparison, large differences in the public opinion between Canada and Germany become obvious. On average, public approval of immigration in Canada was around 15 percentage points higher than in Germany. After having reviewed the evolution and status quo of immigration in the two countries, these differences can be attributed largely to the very distinctive historical, cultural and societal backgrounds.

Additionally, the different immigration management systems may have a large impact on the public perception. According to the Bertelsmann Stiftung (2019), the difference in public opinion roots in the highly effective management of migration in Canada, which bases on two factors: the successful attraction of skilled labor to benefit the economy and a target-based migration model that signals control over migration inflows.

Whereas historical, cultural and societal influencing factors on public opinion are rather difficult to manage directly. Germany can draw key learnings from the Canadian immigration management system. In order to improve the public opinion, Germany could manage migration inflows more effectively, communicate clear targets and focus on skilled immigrants to serve labor market needs. However, for Germany, effective immigration management is a much more complex challenge than for Canada. Due to internal mobility within the EU and German basic law obligations, the two largest parts of immigrant groups, EU citizens and refugees, are hardly manageable. As a result, the most potential for an improvement of the public opinion in Germany offers the active management of skilled migrants. The new “Skilled Immigration Act” offers therefore huge potential to improve the public opinion on immigration in Germany and finally counter demographic challenges. If successful, this initiative could pave the way out of the typical Western European gap between economic needs and public discourse in which immigrants are needed but not wanted and help Germany to develop a more welcoming culture and multicultural identity – similar to Canada’s (Zollberg, 1987).

Key References

- Bertelsmann Stiftung (2019). *Willkommenskultur zwischen Skepsis und Pragmatik*. Retrieved from https://www.bertelsmannstiftung.de/fileadmin/files/Projekte/Migration_fair_gestalten/IB_Studie_Willkommenskultur_2019.pdf, accessed October 27, 2019.
- Bundesamt für Migration und Flüchtlinge (2018a). *Freizügigkeitsmonitoring: Bericht für das Jahr 2017*. Retrieved from <http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/freizuegigkeitsmonitoring-jahresbericht-2017.html?nn=11263428>, accessed October 27, 2019.
- Bundesamt für Migration und Flüchtlinge (2018b). *Wanderungsmonitoring: Erwerbsmigration nach Deutschland*. Retrieved from <http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Broschueren/wanderungsmonitoring-2017.html?nn=2080452>, accessed October 27, 2019.
- Environics Institute for Survey Research (2019). Focus Canada – Spring 2019: Canadian public opinion about immigration and refugees. Retrieved from <https://www.environicsinstitute.org/projects/project-details/canadian-public-opinion-on-immigration-and-refugees---focus-canada-spring-2019>, accessed October 26, 2019.
- EU Commission (2019). Moving & working in Europe. Retrieved from <https://ec.europa.eu/social/main.jsp?langld=en&catId=1172>, accessed October 31, 2019.
- Federal Foreign Office (2019). *Germany opens labour market for skilled workers from non-EU countries*. Retrieved from <https://www.auswaertiges-amt.de/en/einreiseundaufenthalt/feg>, accessed October 27, 2019.
- Federal Ministry of the interior, Building and Community (2017). *Skilled immigrants: an asset to our country*. Retrieved from <https://www.bmi.bund.de/EN/topics/migration/immigration/labour-migration/skilled-immigration/skilled-immigration-node.html>, accessed October 27, 2019.
- Federal Office for Migration and Refugees (2005). *The Impact of Immigration on Germany's Society*. Retrieved from https://www.bamf.de/SharedDocs/Anlagen/EN/Publikationen/Forschungsberichte/fb01-einfluss-zuwanderung.pdf?__blob=publicationFile, accessed October 26, 2019.
- Grubel, H. (2018). Labour Migration. *ifo DICE Report*. Spring Vol. 16, pp. 3-7. Retrieved from <https://www.ifo.de/DocDL/dice-report-2018-1-onlineversion-may.pdf>, accessed October 25, 2019.
- Institut für Arbeitsmarkt- und Berufsforschung (2015). *Asyl- und Flüchtlingsmigration in die EU und nach Deutschland*. Retrieved from http://doku.iab.de/aktuell/2015/aktueller_bericht_1508.pdf, accessed October 27, 2019.
- Meardi, G., Ariles, A. & A. van den Berg (2016). A Canadian Immigration Model for Europe? Labour Market Uncertainty and Migration Policy in Canada, Germany and Spain, In J. E. Dølvik, L. Eldring (Eds.) *Labour Mobility in the Enlarged Single European Market (Comparative Social Research, Volume 32*, pp. 99–124). Emerald Group Publishing Limited.
- Mihm, A. (2010). Immigration in Kanada – Ein aus der Welt geformtes Land. *Frankfurter Allgemeine Zeitung*. Retrieved from <https://www.faz.net/aktuell/politik/ausland/immigration-in-kanada-ein-aus-der-welt-geformtes-land-11068759.html>, accessed October 28, 2019.
- Slater, J. (2015). Germany looks to Canadian model for immigration policy inspiration. *The Globe and Mail*, Retrieved from <https://www.theglobeandmail.com/news/world/germany-looks-to-canadian-model-for-immigration-policy-inspiration/article23381683/>, accessed October 31, 2019.
- Statista (2017). *Number of permanent resident immigrants in Canada in 2017, by entry category*. Retrieved from <https://www.statista.com/statistics/554884/number-of-permanent-resident-immigrants-in-canada-by-entry-category/>, accessed October 28, 2019.
- U.S. News (2018). *Best Countries for Immigrants*. Retrieved from <https://www.usnews.com/news/best-countries/best-immigrants>, accessed October 28, 2019.
- Zolberg, A. (1987). Wanted but not welcome: Alien labour in Western European Development. In W. Alonso (Ed.), *Population in an interacting world* (pp. 36-73). Cambridge, MA: Harvard University Press.

Immigration in Canada: A way of tackling challenges caused by demographic change?

Management Summary submitted by Kai Wurster

Introduction

“Immigration is critical to job creation and long-term economic growth for the middle class. In so many ways, Canada is what it is today thanks to the entrepreneurial spirit of those who chose to build their lives here” (Trudeau, 2015) This quote by the lately re-elected prime minister of Canada shows perfectly the role immigration played in Canadian history and development. It becomes evident that mister Trudeau is convinced that immigration is a key factor accountable for allowing Canada to be one of the most developed countries in the world (UNDP, 2018). However, Canada's demography is likely to change significantly over the next decades with population aging as the most impactful factor (Ades et al, 2016). Against this background, immigration as a possible solution to tackle demographic change will be discussed. First, Canada's changing demography will briefly be introduced. Afterwards, an overview of immigration in Canada will be provided and the usability of immigration when it comes to tackling changes caused by demographic change in the case of Canada will be assessed. Finally, a critical review of immigration as a potential tool to tackle implications of demographic change will be provided and a conclusion drawn.

Demographic Change in Canada

As previously mentioned, Canadian demography will change significantly over the next decades. Especially when talking about population aging, Canada will face an increase in the proportion of people being 65 or older. As shown in the following figures an increase of more than 10% in absolute numbers over a time period of 20 years is likely, resulting also in a fundamentally reduced worker-to-retiree ratio. (Ades et al, 2016)

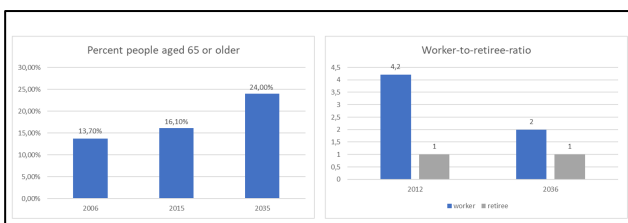


Figure 1 Own graphs based on Ades et al (2016)

These changes result mainly for two reasons. Firstly, the baby boomers, Canadas largest demographic cohort is reaching retirement age and is therefore significantly reducing Canada's total working population (Ades et al, 2016). Secondly, constantly low fertility rates lead to a deficit in the upcoming young workforce (Statistics Canada, 2018). Furthermore, life expectancy rose by four years over the last 20 years (Worldbank, 2019). However, there are also far-reaching differences in demographic trends when talking about different provinces in Canada. For example, low fertility rates in Atlantic provinces (Newfoundland, Labrador, Nova Scotia, and New Brunswick) lead to a negative natural population growth whilst speaking for whole Canada there still is a natural increase in population. (Martel, 2017) These factors together will lead to a situation where Canada-wide population growth would slow down and worker-to-retiree ratio decreases, consequently resulting in slowing economic growth and increasing costs due to rising expenditures for healthcare, public services and old age security. (Ades et al, 2016)

Immigration in Canada

Immigration is often referred to as the process of moving to and becoming a permanent resident of a destination country (Parry, 2019). As previously mentioned, Canada is a country that was built upon immigration and it therefore plays and has always played an important role. Historically, immigration levels have been high but especially throughout the last 20 years, where over 200'000 immigrants arrived every year. Throughout the last two years even over 300'000 people immigrated into Canada – tendency rising. (Statista, 2019) Most immigrants in Canada can be considered as economic immigrants (compare figure 2) which is also reflected in the fact that most immigrants are aged between 25 and 40. Additionally, they speak English or French in most cases (90%), are highly educated and are more likely to be employed than Canada-born residents after being in Canada for 5 years (Government of Canada, 2018) (Statista, 2018)

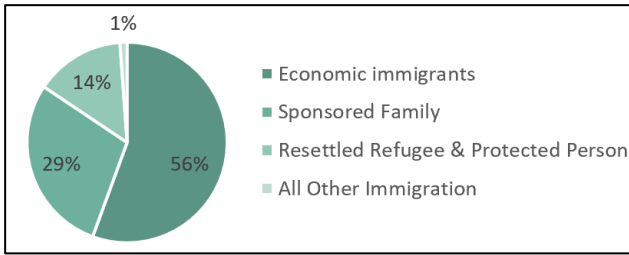


Figure 2 Own graph based on Statistics Canada (2017)

The composition regarding types of immigrants and desired numbers are planned in advance by the Immigration, Refugee and Citizenship Canada (IRCC). Their immigration plan indicates that by 2021, 350'000 people should be admitted per year whereof most are planned to be economic immigrants. (Government of Canada, 2018). To achieve these targets, Canadian immigration can be structured along four programs (economic, business, family and sponsorship and humanitarian and refugees) including sub-programs tailored to target group needs, making it easier for them to immigrate. (Canadim, 2019) The economic program for example includes the express entry system, allowing a fast selection and multiple sub-programs like the Federal Skilled Worker Program, targeted to highly skilled, experienced employees (Canadim, 2019). Applicants in this case would then be scored against a selection factor point grid including dimensions like language skills, age or work experience. By achieving 67 out of 100 points or more they would enter the express entry system, allowing them to get the chance to apply for permanent residency within a short time horizon. (Government of Canada, 2019)

Immigration to face demographic challenges?

After having seen that demographic change will likely trigger significant challenges for the Canadian state, economy and society, further elaborations will show where immigration could potentially help overcoming some of these challenges. Given, the IRCC is actively stating in its annual immigration report that immigration is important for Canada to overcome certain demographic challenges, an in depth analysis of this claim will be performed (Government of Canada, 2018). Therefore, the impact of immigration on available workforce, economic growth, long-term costs and regionally decreasing populations will be assessed.

Workforce size

As previously mentioned, a large portion of the Canadian workforce is currently ebbing into retirement. Retiring baby boomers are therefore causing a decreasing number of people being

employed. However, given that the number of immigrants has been above 300'000 for of the last two years, the percentage of economic immigrants was around 56% and the majority of immigrants was between 25 and 40 years of age, one can easily derive that there must be positive impact on the size of the workforce available (Government of Canada, 2018) (Statista, 2019) This claim is also supported by the following quote from Ahmed Hussen, Minister of Immigration, Refugees and Citizenship: *“Our population is aging and attracting the best and the brightest from around the Globe to fill labor gaps is key to support our Canadian way of life. Newcomers can also help unlock our hidden potential and create middle-class jobs of the future.”* (IRCC, 2019)

Economic growth

Since 2017 Canadian economic growth rates are steadily decreasing, starting at close to four percent annual growth in 2017 and a growth rate of around 1.6 percent so far in 2019 (CEIC, 2019). Furthermore, research suggests that population aging, leading to a weaker worker-to-retiree-ratio, will put further pressure on growth rates (Ades et al, 2016). To counteract this trend immigration is often referred to as a potential growth-driver. In order to assess this hypothesis, long-term scenario calculations can be useful. These show that significant increases in immigration could lead to economic growth that is by far bigger compared to more moderate scenarios respectively a projection of the status quo as shown in the figure below. (Ades et al, 2016)

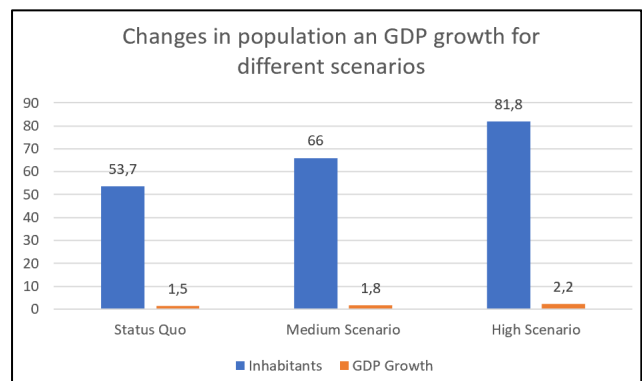


Figure 3 Own graph based on Ades et al (2016)

Reasons for that are rooted in different aspects. First, a higher population boosts spending on durable goods (housing, etc.). Secondly, due to heavy immigration, the workforce will grow tremendously, ensuring increasing levels of consumption compared to retiree-heavier scenarios. Finally, investment spending (machinery, etc.) will increase due to the availability of a larger, skilled workforce. (Ades et al, 2016)

Cost perspective

Costs associated with the implications of demographic change respectively population aging are mainly caused by increased healthcare costs as well as increased costs for old age security. Healthcare costs are likely to rise, given the rising average age of the population and the increased share of people being 65 years or older. Old age security summarizes expenses that ensure a steady income for retired people. However, for both spending categories, a peak in expected costs will be reached between 2030 and 2040, given that baby boomers won't live forever. Nevertheless, previously mentioned scenarios suggest that those spendings vary significantly between scenarios especially relatively compared to governmental revenues. Generally, the scenarios indicate a positive long-term effect of higher immigration numbers on the relative costs associated with healthcare and old age security. (Ades et al, 2016)

Regional differences in population growth

As already mentioned, regional differences in natural population growth have recently been found. It can be seen that especially Atlantic provinces face the problem of naturally decreasing populations mainly caused by low fertility rates. However, when looking at the overall population growth of these provinces, positive population growth becomes evident. This is mainly caused by high levels of net immigration, covering up for negative natural population growth. (Martel, 2017) Net immigration is positively influenced by the so-called Provincial Nominee Program, specifically allowing provinces to access immigrants of special interest for them, willing to settle in a certain area (Candavisa, 2019). Therefore, the conclusion can be drawn that immigration seems to potentially be useful in order to tackle such situations.

Critical evaluation

Above provided elaborations clearly indicate that, in the case of Canada, immigration is likely to qualify as a tool to positively influence some challenges arising from demographic change. However, these elaborations so far lack a critical evaluation that will be provided hereafter. Firstly, immigration shows characteristics of a medical treatment focusing rather on tackling the symptoms than the causes. The author derives this criticism from the fact that the root cause of the described challenges can often be seen in low fertility rates or higher life expectancy. Against this background increased immigration can be considered as a treatment for unsolved underlying problems. This is also compatible with

the insight, that immigration cannot offset all implications of an aging population, but at least it softens the impact (Ades et al, 2016). Therefore, from the authors' point of view, a combination of immigration with concrete approaches to tackle the underlying triggers should be considered to ensure sustainability. Secondly, many of the above-mentioned positive aspects of immigration tend to lack multidimensional evaluation. The provided reasonings are solely based on official numbers as well as estimates. Other dimensions like potential impacts on society and culture seem to be neglected. However, by combining hard facts and predictions with e.g. a view on culture a more holistic and maybe even more reliable assessment could be provided. Thirdly, there is doubt about the overall effect of immigration being positive with regards to generated revenues (to support financing OAS etc.) versus resulting costs through immigrants (Grady & Grubel, 2015). Lastly, the ethical character of the Canadian way of handling immigration can and has already been questioned (Truscott, n.D). Is it for example ethical, in the case of economic immigration (which is by far the largest part), to base decisions about immigration on factors like education, language skills or working experience? This question seems to remain a component of further discussions and should be considered when evaluating the quality of immigration as a tool to tackle demographic challenges.

Conclusion

Canada faces significant future challenges resulting from demographic change. Nevertheless, in the case of Canada, it has been shown that immigration can, in fact, help to tackle some of those challenges by increasing the workforce, supporting economic growth, limiting relative future costs or enabling the avoidance of population decrease in some Canadian provincial areas. However, it has also been shown that using immigration to tackle those challenges often lacks supporting measures to tackle the root causes, a holistic evaluation, the net effect on costs depends on the source and the ethical dimension of immigration admissibility based on education or language skills, remains undiscussed in many situations. Building on the elaborations of this paper it would further be interesting to assess the replicability of these insights to other countries or to provide an analysis of the cultural dimension and its role in using immigration successfully to tackle demographic challenges.

Key References

- Ades et al (2016). A Long-Term View of Canada's Changing Demographics. From https://www.conferenceboard.ca/temp/7f01e8f1-30a9-4f7a-9079-2a11c1a6e8df/8282_LongTermDemographics_RPT.pdf
- Canadim. (2019). Immigrate to Canada. From <https://www.canadim.com/immigrate/>
- Candavisa. (2019). Provincial Nominee Program (PNP). From <https://www.canadavisa.com/provincial-nomination-program.html#gs.dj5qra>
- CEIC. (2019). Canada Real GDP Growth. From <https://www.ceicdata.com/en/indicator/canada/real-gdp-growth>
- Government of Canada. (2018). 2018 Annual Report to Parliament on Immigration. From <https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2018/report.html>
- Government of Canada. (2019). Eligibility to apply as a Federal Skilled Worker (Express Entry). From <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/eligibility/federal-skilled-workers.html>
- Grady, P., and Grubel, H. (2015) Immigration and the Welfare State Revisited: Fiscal Transfers to Immigrants in Canada in 2014. From https://mpra.ub.uni-muenchen.de/67944/1/MPRA_paper_67944.pdf
- IRCC. (2019). Immigration key to unlocking Canada's future economic success. From <https://www.canada.ca/en/immigration-refugees-citizenship/news/2019/06/immigration-key-to-unlocking-canadas-future-economic-success.html>
- Martel, L. (2017). Recent changes in demographic trends in Canada. From <https://www150.statcan.gc.ca/n1/pub/75-006-x/2015001/article/14240-eng.htm>
- Parry, S. (2019). Immigration. From <https://www.britannica.com/topic/immigration>
- Statista. (2018). Canada: immigrants by age in 2018. From <https://www.statista.com/statistics/443305/international-migrants-in-canada-2014/>
- Statista. (2019). Number of immigrants in Canada 2000-2019. From <https://www.statista.com/statistics/443063/number-of-immigrants-in-canada/>
- Statistics Canada. (2018). Fertility: Fewer children, older moms. From <https://www150.statcan.gc.ca/n1/pub/11-630-x/11-630-x2014002-eng.htm>
- Trudeau, J. (2015). Liberals unveil new plan for immigration focused on family reunification, middle class growth. From <https://www.liberal.ca/liberals-unveil-new-plan-for-immigration-focused-on-family-reunification-middle-class-growth/>
- Truscott, R. (n.D). Canada's immigration system is broken, but not beyond repair. From http://www.ethicscentre.ca/EN/resources/Ethics_Canadas_Immigration_SystemFINALPOSTEDVERSION.pdf
- UNDP. (2018). Human Development Indices and Indicators: 2018 Statistical Update. From http://www.hdr.undp.org/sites/all/themes/hdr_theme/country-notes/CAN.pdf
- Worldbank. (2019). Life expectancy at birth, total (years) - Canada. From <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=CA>

Incentives to drive higher fertility rates in Europe

Management Summary submitted by Simon Frei

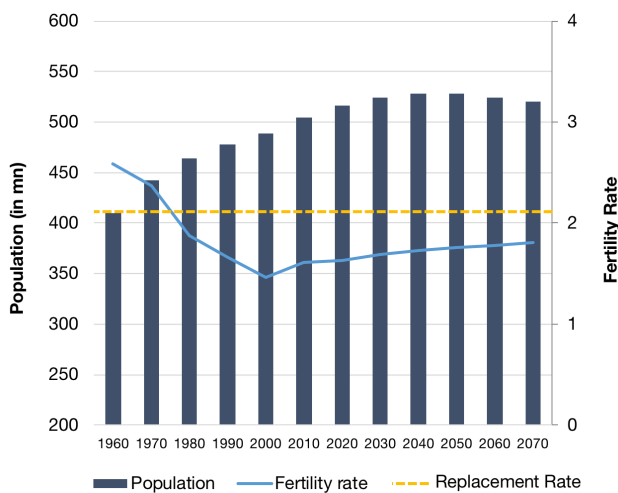
Context

Over the past decades, countries around the world have experienced population ageing. As a result of a steady decline in fertility rates and increased life expectancy, the world's population is becoming older. Europe has been at the forefront of this development with a fertility rate below the replacement rate of 2.1 since almost 45 years (World Bank, 2019). In the following, we want to explore what have been the drivers of low fertility in Europe, illustrate the risks and problems associated with low fertility, and discuss how birth rates could be brought back to higher levels again.

Low Fertility in Europe

Figure 1 illustrates the development of population growth and fertility in Europe over the last decades. Not only do we see that the fertility rate has decreased steadily since the 1960s, but we also conclude that the fertility rate has been below the critical replacement ratio of 2.1 since 1975 (WHO, 2019). Naturally, the question arises what the cause of this decline has been.

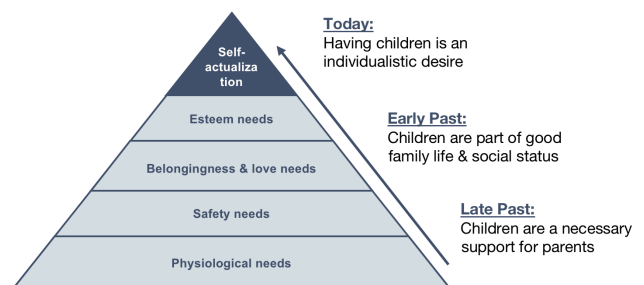
Figure 1: Population Growth and Fertility Rate in EU
(Own Figure, based on data from the World Bank, 2019)



When it comes to explaining the causes of low fertility rates, three main drivers can be identified. Firstly, *advances in health care and old-age care* decreased the demand for descendants. Back in the days, child mortality was high and average life expectancy rather short. Having children was a necessity. Children acted as an additional labor force, provided old-age care to parents and were a source of financial support. Advances in medicine have decreased child mortality and helped people live longer. Thus – in combination with the introduction of pension systems and old-age

insurance – having children as a mean of old-age support has become neglectable. Secondly, *industrial innovations* have contributed to the decline. On the one side, the invention and fast spread of contraception has given couples control over unplanned pregnancies (Anderson & Kohler, 2015). On the other side, advances in technology have shifted work largely away from craftsmanship to the service industry. Washing machines at home and laptops at the office, take over tasks of manual labor and thus reduce the perceived demand for additional people. Lastly, dynamics of *social norms* have altered the mindset on having children. As pointed out previously, having children was historically a necessity. Advances in health care and social support systems, have turned having children and a harmonic family life into a social status symbol. In today's world, having children is to some extent seen as a hindrance in pursuing one's own goals and dreams. Globalization has created a multi-option society that trades off having children for traveling the world. Moreover, the integration of women into the workforce has shaped the role of a child as a career obstacle. Consequently, the desire for children has seen itself vanish at the rise of opportunity.

Figure 2: Change in mindset of having children illustrated along Maslow's Pyramid of Needs
(Own Figure, based on Maslow, 1943)



Being faced with this seemingly deterministic trend, a closer look at the potential problems and risks associated with low fertility naturally follows. Looking back at Figure 1, we see that the population is bound to stagnate around mid-century. This is accompanied by an increase in the share of people in retirement age (Trippel & Groth, 2011). The projected development puts great pressure on pension and old-age insurance systems. A study by the United Nation (2019) shows

that the dependency ratio¹ in Europe will increase to around 50%² which signifies a doubling from the initial 26.1% we encounter today. Population ageing will not only raise the question as to who will finance the costs of longevity (e.g. pension payments, long-term care), but also who will fill the open vacancies caused by a shortage of labor – especially in day care and retirement homes. Further, as a decreasing working age population translates into lower productivity and innovation capability (assuming there is no significant advances in technology), the competitiveness of Europe on a global scale will be at stake (Groth & Eberstadt, 2007). Whether Europe will be able to manage the drawbacks of low fertility and potentially even turn it into an opportunity is still to be seen.

Proposed Incentives

Looking at the causes of low fertility, it is obvious that it is not a possibility to reverse some of the developments to achieve previously high fertility rates. Thus, the question arises, what can European nations do instead to foster fertility?

Most European countries depict fertility levels around 1.5 children per woman. However, there are a few nations which are closer to the 2.1 replacement rate, such as France (1.9), Sweden (1.9) and Denmark (1.8). A closer look has led us to derive three key drivers of high fertility in these countries. Firstly, *loose social norms* for family planning are a crucial contributor to increased fertility rates. Having children out of marriage, single parenthood or having no children at all, constitute valid and socially accepted options of family planning. This removes socially constructed barrier to childbearing (Billari & Kohler, 2004). In contrast, Japan, for instance, imposes strict norms on male and female roles – which is surely one driver of its low fertility rates (Tsuya, 2017). Pregnancy without marriage is highly frowned upon and childcare as well as household work is clearly the task of women. This doesn't make entering a marriage particularly attractive for young females. However, also in comparison with other European nations, the previously mentioned countries are much more advanced. In Sweden, for instance, every second child is born without married parents. In Greece, the same number is below 10% (Eurostat, 2018).

Secondly, *female integration into the workforce* is a key driver of higher fertility. 86% of women are working in Denmark, while only 64% of the female population participate in the workforce in

Italy. A higher share of female workers implies that needs of women – and consequently mothers – are taken better care of at work. Flexible working hours, employment protection and parental leave are features supporting parents in raising children and thus make having children more attractive (Miranda, 2011). As explained previously, the perceived disadvantage of mothers in their career is a major cause of low fertility and can only be counteracted by such initiatives. In Denmark for instance, parents are given a combined 52 weeks of parental leave that can be split between the father and mother almost arbitrarily (European Commission, 2019). Sweden as a second example offers 480 days of parental leave. Sweden is surely a role-model case when it comes to policy setting (Hoem, 2005). In contrast to other European nations, policies in Sweden are centered around "...enabling individuals to pursue their family and occupation tracks without being too strongly dependent on other individuals or [...] institutional factors." (Andersson, 2008). On the one side, this pioneering mindset allows for the previously introduced loose social norms to take place. On the other side, it promotes gender and social equality at work by giving everybody in the workforce the same opportunities.

Thirdly, *childcare support* is a driving force of fertility. On the one side, parents in the countries at focus receive financial support by the government such as housing allowances. In addition, first class education is provided for free in Scandinavian countries. Such initiatives let parents dream of raising successful children independent of the family's financial background. As discussed previously, the role of children has shifted from a necessity to self-realization. Thus, being able to raise children that are expected to face a bright future is not only in line with the current perception of children, but crucial to the desire to become a parent (Bauer, 2019). On the other side, day care and nurseries are fairly widespread in the countries at hand compared to the rest of Europe. Institutions taking care of your child during the day facilitate integration of parents into the workforce. The availability and acceptance of such institutions makes having children more desirable as it – again – removes the disadvantage of being a parent in your career (Hoem, 2005).

For the conclusiveness of the analysis, we not only had a look at nations currently having the highest birth rates, but also those that had seen

¹ Number of people aged 65+ as a fraction of people aged 15 to 64.

² Depending on the projected scenario numbers can vary from 46.4% to 52.2%.

the fastest growth in recent years. As illustrated in Figure 3, about a quarter of all nations worldwide have seen their fertility rate increase in the last 10 and 20 years. Interestingly, 22 out of the 45 nations that have seen their birth rate increase in the last 10 years are European. Russia and Lithuania were leading the recent growth with an increase of 24%, a number of Eastern European nations (e.g. Hungary) followed with 15% growth in fertility rates.

Figure 3: Number of countries having a higher/lower birth rate today than 10/20/30 years ago (Based on World Bank, 2019).

	1987	1997	2007
Higher today	16	49	45
Lower today	184	151	155

A closer look into what have been the drivers of these recent increases in fertility rates has been pursued. Ultimately, we conclude that financial incentives by the government have been the key driver of Eastern European fertility growth (Hopkins, 2019). It is questionable, however, whether financial support is a sustainable solution in the long run. Changes in cultures and mindsets are seen to be more effective and reinforcing.

All in all, European nations struggling with low fertility are well advised to introduce policies aimed at reducing the perceived disadvantage of mothers in today's workforce. Sharing the costs of childbearing among society and fostering gender equality are key guidelines to follow. Doing so requires a change in mindset to one that integrates the needs of parents into the working environment, provides childcare support and at the same time allows for individualistic life planning. Financial incentives or simplistic policies alone will in all likelihood not have the desired impact. Unless future parents are freed from trading off personal goals and dreams for raising a child and the costs of childbearing are fairly shared among society, Europe will likely be stuck with its low fertility rate.

Outlook & Alternative Solutions

In recent times, we have seen a number of central European companies draw near some of the previously introduced incentives. Basel-based Pharmaceuticals giant Novartis is offering its male workforce 90 days of paid paternity leave. This is well above the mandatory minimum in Switzerland, which was raised only very recently (October 2019) from two days to two weeks. A

number of companies followed this decision. The Boston Consulting Group's Swiss office announced mid-October that it would introduce a mandatory 14 weeks of gender-neutral parental leave.

A lot of time might pass, before the impact of the previously illustrated incentives will be seen. In the absence of higher fertility rates, Europe is predestined to find other solutions to cope with the previously mentioned problems of low fertility. Migration³ is one possibility to provide the needed labor force. European nations are well advised to foster fertility among their citizens as migration can entail a few possible drawbacks. Cultural differences, for instance, can lead to societal tensions. Depending on the background, it will take migrants several years to fully integrate into society. Further, migration can result in social inequalities. This is especially explicit when migrants are refugees from less-developed regions or war zones. Finally, migrant workers might not have the relevant skills needed (e.g. doctors or health care personnel).

Conclusion

All in all, we can say that Europe is put in a highly delicate situation as a result of its low fertility rate. Nevertheless, there is a number of potential solutions to the problem. We discussed three sustainable solutions to drive higher fertility rates. Loosening social norms, improving parental support and fostering female integration into the workforce, help spreading the costs of childbearing across the society and thus make parenthood more attractive. Some companies are moving in this direction. In the meantime, migration could be a possible solution to the lack of labor. Whether the impact of the proposed incentives will be sufficient to bring fertility rates back to the replacement level remains yet to be seen.

³ Elaborating on the impact of migration in detail would be beyond the scope of this paper. The author refers to Lutz & Scherbov (2008) for a detailed

analysis on the topic and Groth (2009) for a deep dive on the situation in Switzerland.

Key References

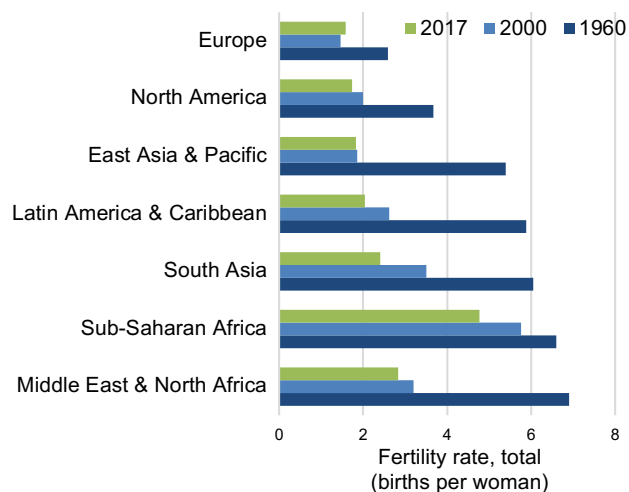
- Anderson, T., & Kohler, H.-P. (2015). Low Fertility, Socioeconomic Development, and Gender Equity. *Population and Development Review*, 41(3), 381–407.
- Andersson, G. (2008, May 17). Family Policies and Fertility in Sweden.
- Bauer, E. (2019, August 9). *Is Sweden Our Fertility-Boosting Role Model?* Retrieved from www.forbes.com: <https://www.forbes.com/sites/ebauer/2019/08/09/is-sweden-our-fertility-boosting-role-model/#1285a91213cb>
- Billari, F. C., & Kohler, H.-P. (2004). Patterns of low and lowest-low fertility in Europe. *Population Studies*, 58(2), 161–176.
- European Commission. (2019). *Denmark - Maternity benefit*. Retrieved from Employment, Social Affairs & Inclusion: <https://ec.europa.eu/social/main.jsp?catId=1107&langId=en&intPagelId=4487>
- Eurostat. (2018, April 16). *Are more babies born inside or outside marriage?* Retrieved from [Europa.eu](http://europa.eu): <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20180416-1>
- Groth, H. (2009, March). Die Schweiz und ihre Demografie. *The WDA – HSG Discussion Paper Series on Demographic Issues*, 1-32.
- Groth, H., & Eberstadt, N. (2007). Healthy Old Europe. *Foreign Affairs*, 86(3), 55-68.
- Hoem, J. (2005). Why does Sweden have such high fertility? *Demographic Research*, 13(22), 559-572.
- Hopkins, V. (2019, September 5). *Hungary chides the childless as 'not normal' as birth rate tops agenda*. Retrieved from www.ft.com: <https://www.ft.com/content/fe6ac9c4-cfe3-11e9-99a4-b5ded7a7fe3f>
- Lutz, W., & Scherbov, S. (2008). Can Immigration Compensate for Europe's Low Fertility? *Austria, Europe: Institut National d'Etudes Demographiques (INED)*, 1-16.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396.
- Miranda, V. (2011). Cooking, Caring and Volunteering: Unpaid Work Around the World. *OECD Social, Employment and Migration Working Papers*, 116, 1-40.
- The World Bank. (2019). *Fertility rates, total (births per woman)*. Retrieved October 2019, from www.worldbank.org: <https://data.worldbank.org/indicator/sp.dyn.tfrt.in>
- Trippel, M., & Groth, H. (2011, September). Demographic Shifts in EU 27, Norway and Switzerland: Population and Dependency Ratio Forecasts until 2030. *WDA-HSG Discussion Paper Series on Demographic Issues*, 1-6.
- Tsuya, N. O. (2017, June). Low Fertility in Japan - No End in Sight. *AsiaPacific Issues*, 131, 1-4.
- WHO. (2019, October 20). *Total Fertility Rate*. Retrieved from www.searo.who.int: http://www.searo.who.int/entity/health_situation_trends/data/chi/TFR/en/

Ongoing Low Fertility in Europe – Threats and Opportunities of the Demographic Change

Management Summary submitted by Annette Kick

Introduction

Since a few decades, Europe is facing a critical development: The country alliance has to manage an ongoing low fertility rate and an accompanying demographic change. Reasons for this are, inter alia, improved contraceptive methods, changes in social norms as well as educational and work settings promoting less children. Additionally, statistics show a relevant correlation between the level of income and the fertility rate (The World Bank Group, 2017). As most European countries count to the wealthier nations in the world, the decrease of births can also partly be seen as a result of the high living standards. As seen in figure 1, Europe positions itself with an average of 1,6 children born per woman over her lifetime far below, for example, the Middle East and North Africa (2,8) or Sub-Saharan Africa (4,8) (The World Health Organization, 2019 & The World Bank Group, 2017). Already since the last century, Europe's fertility rate is below the replacement level of 2,1 for developed countries (The World Health Organization, 2019). As a consequence, Europe's population is, in contrast to the total world population, declining in the long run.



Graph 1: Comparison of worldwide fertility-rate developments (The World Bank Group, 2017)

Together with the decreasing mortality rate, statistics predict people being older than 65 years accumulating over 30% of Europe's society by 2100 (The World Bank Group, 2017). Consequently, the ongoing low fertility represents a significant influence for the political, economic, social as well as structural development. With this background, this paper focuses on the major

threats created through Europe's low fertility rate but also the opportunities connected to the demographic transition.

Threats of the demographic change

To start with, this analysis focuses on the threats through Europe's ongoing low fertility.

As the economic performance of Europe's past partly depended on the growth of its labor-force, the future gross domestic product (GDP)-growth potentially declines due to the proportional decrease of people in working-age. However, other global regions still profit from the demographic dividend, which will lead to a decrease of Europe's share of world GDP (European Commission, 2012). This smaller share represents a threat to Europe not only in terms of economic welfare but it is also closely related to, for example, future negotiation power for Europe's trade agreements, international relationships and exclusive national partnerships. This is because Europe's importance for the world market will not be the same as it used to be in the past.

Stepping back from the economic point of view, also the social structure is affected through the demographic transition. As the proportional share of the above-working age population increases, the dependency rate of retirees on the workforce is significantly influenced (Eurostat, 2019). This development represents a threat as the dependency rate goes hand in hand with higher costs for pensions and healthcare as well as an increasing individual responsibility with regards to retirement provisions. Whereas the lower working-age population leads to less tax revenues, Europe's total age-related expenditures are prognosed to increase by approximately 3% of GDP by 2070 (European Commission, 2018). This results in a proportional shift of national expenditures as less money is left for alternative sectors as education, infrastructure or security. This shift can not only be seen on a monetary basis but also in the social composition. As seniors become more forceful in the public opinion and increasingly influence elections, the European countries' future will be shaped by a different age group as it used to be. Consequently, the demographic transition not only influences the economic and political standing, but also Europe's social and cultural system.

Opportunities of the demographic change

However, the demographic transition should not only be seen as a threat to existing structures but can also bring opportunities.

The first opportunity is the indirect pressure, the significance of the demographic change puts on Europe's governments and policy makers. As the decline in births per woman influences Europe's future economy and social as well as political structure, there is a need of promoting family-friendly initiatives. Therefore, governments and political parties try to implement incentives supporting couples and families which represents an opportunity for a more social development. "The Best Countries to Raise Kids"-organization ranks nations, inter alia, on the basis of the following criteria how children-friendly their government is: The compliance to human rights, gender equality, income equity, development of the public education as well as the health system, safety, general happiness and family friendless (US News, 2019). According to their ranking, countries with these attributes give incentives to their population to raise a family with children. Concrete policy initiatives to reach these criteria are amongst others tax-transfer policies, parental leave allowance by law, working hour policies or public education campaigns (McDonald, 2006, p. 213). As an example, France tries to encourage large families by increasing the monthly grant for mothers who take time off work for a third child in comparison to the first two children's monetary support (Deutsche Welle, 2005). This exemplary initiative represents an improvement for women who could initially not finance a large family and can be seen as one option to foster fertility. Therefore, the pressure on European governments through the demographic change can also be interpreted as an opportunity for individuals receiving a more family-friendly development and support for families with a desire to have children but initially could not afford it.

Another opportunity results from the challenge of the decreasing workforce. As a consequence, businesses feel the need to adapt their working conditions in order to keep their left-over employees (European Commission, 2016 & European Commission, 2017). On the one hand, family-friendly working environments help to encourage parents to raise a family while continuing their work. On the other hand, several organizations try to hold their older employees back from retiring as the proportion of elderly employees increases and the loss of them would mean a significant minus in their labor input as well as a leakage of skills and knowledge. Potential initiatives to support family-friendly conditions are

term-time working, where employees can take a leave during school holidays, mobile working or childcare support through an on-site nursery or financial aid for childcare costs (European Commission, 2017). Examples for the retainment of elderly employees are firms that offer social protection arrangements as insurances solely within working contracts, opportunities to work from home or fiscal benefits through employment (European Commission, 2016). These initiatives aim to decline turnover within an organization. In Switzerland, "Novartis" offers for both issues outstanding programs in order to overcome problems of the demographic change: Through its "Prime Force"-program, employees who have retired can continue working on an as-needed basis for compensation. With this initiative, the firm maintains its knowledge and former employees benefit from further income (Novartis, 2015). In terms of promoting fertility while maintaining parents within the Novartis group, the organization provides several family-friendly benefits. The 90-day paternity leave, which would be only 14 days by law, is particularly noteworthy and represents the longest possible parental leave for fathers in Switzerland (Röttker, 2019). Consequently, the development to a more adaptable work environment is an opportunity for companies to improve their labor input through more parents as well as elderly employees staying with the firm. Additionally, it is a chance for workers to receive more beneficial work contracts and support for every stage of their life.

Additionally, Europe's demographic change and the low fertility also involves several business cases. In terms of demand, the proportion of elderly customers increases. As statistics show that people over 50 years old control more than 80% of a nation's household wealth, the general willingness to pay rises as a result of Europe's aging (Irving, 2018). Worldwide, spending amongst elderly generations reaches almost 15 trillion USD, leading to the conclusion that there is huge business potential in serving this customer group (Irving, 2018). As a consequence, several industries are expected to experience consumption growth of up to 40% between 2015 and 2030 due to the fact that elderly people make the majority of investment decisions (Irving, 2018). Businesses as in-home care, home remodeling, transportations services but also senior travel companies are prognosed to boom during next decades due to the proportionally changing demand (Lesonsky, 2018). Additionally, there is high potential for the supply side. New innovations targeting older customers in branches as pharmacy, biotech or technology devices could increase sales and profit for

participating firms (Irving, 2018). As a result, the business case of elderly customers contributes not only to the welfare of senior citizens, but is also likely to be highly profitable for adapting companies.

Finally, Europe as a region can benefit from the low fertility. On the one hand, it can profit from the comparatively high level of health of its population (Miller & Lu, 2019). On the other hand, it can gain from the open mindset of Europeans to delay the retirement age in return to receive more financial benefits (Euractiv, 2012). Both factors can be used to counter labor deficits through low fertility and balance them with older workers. In case Europe would revise its tax-, pension- and social system, it could position itself as a pioneer in including elderly workers on the global market where a majority of countries face the same issue of an ageing workforce (Eberstadt & Groth, 2007). Another chance can be conducted by cross-generational platforms while working on innovations. Such an approach would help to understand age-related unserved demand, could position Europe as leading in age-related innovations and profit from first-mover advantages. An example would be “Senior Lab” of the Swiss Confederation, which uses participative methods and design thinking in order to foster innovations for older generations (Schweizerische Eidgenossenschaft, 2019). If Europe would establish such institutions as a matter of course, it could overtake other regions in terms of age-related approaches. To sum it up, Europe and its governments should set up laws, initiatives and programs including the healthy older generation and boosting innovative progress. If it does so, it holds the opportunity to stand out of all regions facing similar demographic issues.

Conclusion

To sum it up, the ongoing low fertility certainly influences Europe’s future. The resulting demographic change’s impacts can be detected on a global, national but also individual stage. However, these impacts are not only negative but can also be positive influences on Europe’s development. Focusing on the threats, the declining GDP-growth due to the shrinking workforce, the increasing age-related national expenditures and the public opinion’s shift due to proportionally older than younger people in the society represent the major risks. In terms of opportunities, the pressure through the demographic change leads to positive developments regarding family-friendly policies as well as age-adaptive working environments helping both young families and elderly employees. Also, the changing customer composition offers business potential for

innovative and adaptable organizations. As the average willingness to pay as well as the investment possibilities rise in connection to the increase of elderly people’s share of the population, firms have the opportunity to sell targeted products on a higher scale than before. Additionally, Europe as a whole can counter its labor deficits when using the high level of health and willingness of its population to delay the retirement, when revising its tax-, pension- and social structure. Positioning itself as an age-targeted innovation pool with the help of intergenerational platforms, Europe could even lead age-adaptive initiatives on a global basis and stand out in a world, where several regions face the same issue of a changing demography. In summary, the issue of low fertility is a complex construct which should not only be seen as a future threat but rather as a development all different social strata have to adapt to and eventually even have the chance to benefit from.

Key References

- Deutsche Welle. (2005). *France Moves to Encourage Large Families*. Retrieved October 23 2019, from <https://www.dw.com/en/france-moves-to-encourage-large-families/a-1720921>
- Eberstadt, N., & Groth, H. (2007). *Europe’s Coming Demographic Challenge: Unlocking the Value of Health*. *American Enterprise Institute for Public Policy Research*.
- Euractiv. (2012). *Europeans willing to work longer ... for more pay*. Retrieved November 01 2019, from <https://www.euractiv.com/section/innovation-industry/news/europeans-willing-to-work-longer-for-more-pay/>
- European Commission. (2012). *Global Europe 2050*. Retrieved October 23 2019, from https://ec.europa.eu/research/social-sciences/pdf/policy_reviews/global-europe-2050-report_en.pdf
- European Commission. (2016). *Different models of work and welfare in ageing Europe*. Retrieved October 23 2019, from <https://ec.europa.eu/social/main.jsp?langId=en&catId=1196&newsId=2454&furtherNews=yes>

- European Commission. (2017). *Family-friendly workplaces*. Retrieved October 23 2019, from <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjT25HtqKHIAhURzaQKHeeTC6MQFjAAegQIABAC&url=https%3A%2F%2Fec.europa.eu%2Fsocial%2FblobServlet%3FdocId%3D20128%26langId%3Den&usg=AOvVaw07wragVZyBkiujkCOjhfpz>
- European Commission. (2018). *The 2018 Ageing Report*. Retrieved October 23 2019, from https://ec.europa.eu/info/sites/info/files/economy-finance/ip079_en.pdf
- Eurostat. (2019). *The EU's population projected up to 2100*. Retrieved October 23 2019, from <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190710-1>
- Irving, P. (2018). *Ageing Populations: A Blessing For Business*. Retrieved October 23 2019, from <https://www.forbes.com/sites/nextavenue/2018/02/23/aging-populations-a-blessing-for-business/#ea4167d7a77a>
- Lesonsky, R. (2018). *Hot Market Alert: Start A Senior Business*. Retrieved October 23 2019, from <https://www.forbes.com/sites/allbusiness/2018/09/11/hot-market-start-senior-business/#71ba186d2a1a>
- McDonald, P. (2006). An Assessment of Policies that Support Having Children from the Perspectives of Equity, Efficiency and Efficacy. In *Vienna Yearbook of Population Research* (Vol. 4, pp. 213-23). Vienna: Austrian Academy of Sciences Press.
- Miller, L., & Lu, W. (2019). *These Are the World's Healthiest Nations*. Retrieved November 01 2019, from <https://www.bloomberg.com/news/articles/2019-02-24/spain-tops-italy-as-world-s-healthiest-nation-while-u-s-slips>
- Novartis. (2015). *Prime Force*. Retrieved October 23 2019, from https://www.arbeitgeber.ch/files/2015/04/20150121_Zukunft-Arbeitsmarkt-Schweiz-Präsentation-Novartis.pdf
- Röttker, C. (2019). *Diese Firmen machen Väter glücklich*. Retrieved October 23 2019, from <https://www.handelszeitung.ch/management/diese-firmen-machen-vater-gluecklich>
- Schweizerische Eidgenossenschaft. (2019). *Senior Lab: Ältere Menschen im Zentrum der Innovation*. Retrieved November 01 2019, from <https://sozialesicherheit-chss.ch/artikel/senior-lab-aeltere-menschen-im-zentrum-der-innovation/>
- The World Bank Group. (2017). *Fertility rate, total (births per woman)*. Retrieved October 23 2019, from <https://data.worldbank.org/indicator/sp.dyn.tfrt.in>
- The World Health Organization. (2019). *Total Fertility Rate*. Retrieved October 23 2019, from http://www.searo.who.int/entity/health_situation_trends/data/chi/TFR/en/
- US News. (2019). *Best Countries for Raising Kids*. Retrieved October 23 2019, from <https://www.usnews.com/news/best-countries/best-raising-children>

Ongoing low fertility in Europe – macro-environmental analysis along the PESTEL dimensions

Management Summary submitted by Konstantin Lamm

Introduction

Demographic change is upon Europe, and it is taking centre stage in the continent’s social, political and economic development. Its forces are irreversible, and its consequences are divers.

By the end of the century, more than 30% of the population of the European Union will be over the age of 65. Children below the age of 14 will account for only 14% of the population. By 2070, age-related expenditures will have soared by up to 4.1% of the European Union’s gross domestic product (GDP). In the same period, the labour force in the European Union will decline by around 13%, impairing economic growth (European Commission, 2018, pp. 30–32, pp. 369–371; European Commission, 2019).

The mechanics of demographic transition are asymmetric and lagging changes in the fertility and death rates over time. These changes are illustrated by the Demographic Transition Model in figure 1.

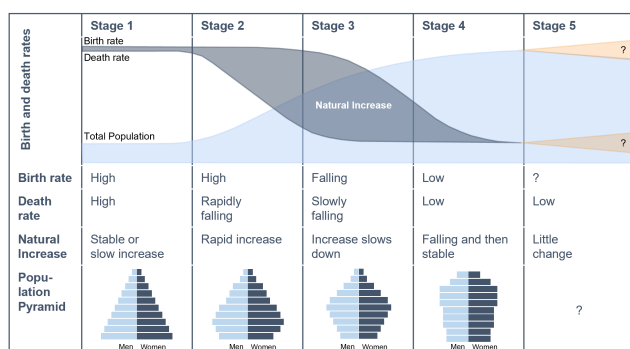


Figure 1: The Demographic Transition Model
Source: Roser, Ritchie & Ortiz-Ospina, 2019

Europe is particularly vulnerable to this momentum, as its fertility rates of around 1.6 are substantially below the replacement level (2.1) at which a population is able to sustain itself at its current level. This has been an acknowledged fact from as long ago as the last century (World Bank, 2019). Thus, compared to other regions, Europe is likely to face the consequences of its population decline not only more severely but also far sooner.

The challenges resulting from demographic change are complex, interdependent and multi-faceted. As a result, the full spectrum of effects is all but invisible to the broader public.

One construct aimed at embracing and structuring this complexity is the PESTEL framework. It

scans the macro-environment along six dimensions – the political, economic, social, technological, environmental and legal – while emphasising the interplay of those dimensions.

The dimensions of the PESTEL model are a good fit for the challenges related to persistent low fertility and demographic change in Europe for several reasons:

1. *Political* – as a growing elderly population is putting pressure on the social security system
2. *Economic* – as the economy must overcome a declining labour force to ensure continued growth
3. *Social* – as low fertility rates reshape the population structure and challenge the social contract
4. *Technological* – as technological progress is critical to successfully combating the consequences of low fertility
5. *Environmental* – as the changes in population size and structure affect the environment
6. *Legal* – as an adequate response to demographic change requires legal implementation

This paper examines a select number of the most prevalent findings within these dimensions, with a particular focus on the social, economic and political spheres.

Social

The most marked consequence related to low fertility in Europe concerns the size and structure of the population. Beginning in the 1960s, Europe’s population increased by around 100 million people. Population growth fuelled the economy. Ongoing low fertility is expected to slow population growth, eventually leading to a decline in population numbers. Given the continuing growth trajectories in other regions, especially Africa and Asia, Europe’s relative share of the world’s population is expected to decline (World Bank, 2019).

Within Europe itself, the population structure is set to change. Most remarkable is the transition towards a population structure dominated by older members of the populace (figure 2). Whereas the non-working age population currently accounts for around 20% of the European

Union's population, that share is expected to rise to around 31% by the end of this century. Over the same period, the share of children below the age of 14 is expected to decline from around 16% to around 14% (European Commission, 2019).

This trend accompanies a decline in the working-age population. The economic consequences of this trend are discussed later in this paper. Suffice it here to say that this shift in population structure will lead to labour shortages across many industries. Particularly at risk are some of Europe's most critical sectors – including those combating the growing challenges of demographic change, such as the healthcare sector.

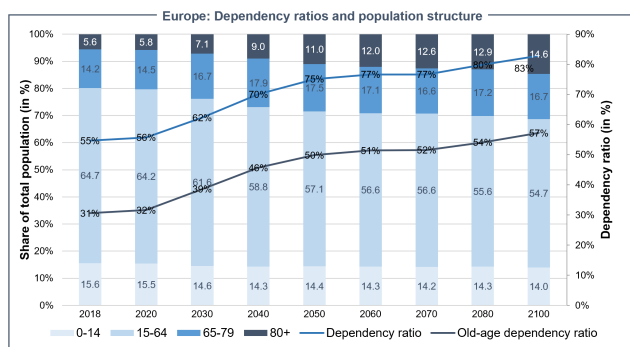


Figure 2: Projection of population structure and dependency rates in the EU, 2018–2100

Data source: European Commission, 2019

One of the historical cornerstones of family life in Europe is the social contract. This unspoken set of social norms sees one generation raising the next, which – in appreciation for their upbringing – then takes care of their elders following retirement, whether directly or indirectly (UBS, 2018, p. 3).

Today, this model is under increasing pressure. The trend in the old-age dependency ratio – which expresses the number of people over the age of employability per 100 people of working age – quantifies this evolution. In the European Union, the old-age dependency ratio is expected to nearly double from approximately 31% to around 57% by the end of the century (European Commission, 2019). Put differently, by 2100, every worker will have to sustain an additional 0.8 retirees.

There is reason to believe that, as a result, ill-prepared pension systems will lose their funding base, forcing individuals to assume greater responsibility. From a societal perspective, the importance of ensuring dignity and redefining the roles of individuals in this reshaped society will become increasingly important (SwissLife, 2016; UBS, 2018, p. 16).

Finally, patterns of behaviour and social norms will be subject to change. Future retirees are set

to become more forceful in shaping both public opinion and social norms.

Economic

At a macro-economic level, fertility predominantly affects economic growth. Over the past century, Europe has experienced the benefits of the so-called demographic dividend. The share of young and productive people outgrew the share of the elderly members of society, and the dependency ratio fell. The labour force increased, stimulating economic growth. All else being equal, the expected decline in the labour force and the increasing old-age dependency ratio are set to reverse this trend, resulting in a demographic drag.

While the size of the labour force is of central importance, Europe's economy is more than simply the sum of its people and its capital. Thus, despite a decline in the European labour force, the European Commission forecasts that the economy will grow over the next 50 years (figure 3). This projection assumes that other factors will compensate for the smaller workforce, ameliorating the negative effects of labour force decline (European Commission, 2018, pp. 369–371).

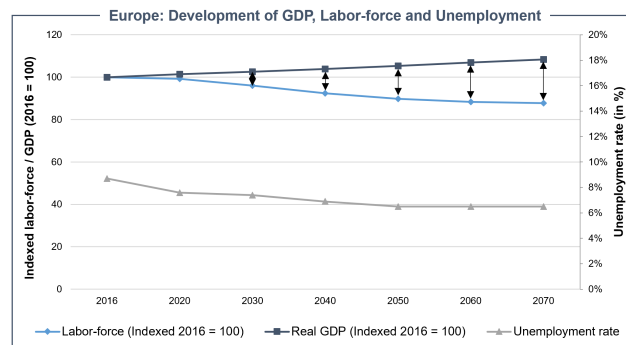


Figure 3: Projection of GDP, Labour-force and Unemployment in the EU, 2016–2070

Data source: European Commission, 2018, pp. 369–371

In particular, it is expected that productivity improvements stemming from technological progress will play an important part in that evolution. Moreover, the expected rise in the proportion of highly skilled jobs will enable workers to delay their exit from the labour market. This factor, together with delayed retirement, is assumed to prevent a scenario in which the productivity of an individual drops to zero at the age of 65. Instead, there will be a smoother transition (European Commission, 2018, pp. 369–371; OECD, 2019, pp. 7–8; UBS, 2018, p. 26).

These changes will compel governments to establish suitable regulatory frameworks. At the same time, new governance structures and working models addressing the reshaped

working patterns will gain in importance (OECD, 2019, pp. 12–13).

Finally, the dominance of older people in European society will alter supply, demand and spending patterns, leading to industry overhauls in sectors with particular exposure to the older population. New business models aimed at tackling the specific challenges of demographic change will emerge (UBS, 2018, S. 18–19; *note: this will be discussed in another article in the booklet*).

Political

With a smaller working-age population comes declining tax revenues. This is a particular threat to the fiscal position of Europe and its member states, where lower revenues meet soaring demography-related expenditures.

The European Commission (2018, pp. 30–32) projects that age-related expenditures will increase by between 2.0 and 4.1% of GDP by 2070 – a greater share of GDP than Germany allocated in its 2018 federal budget to education & research, defence and transportation combined (BMF, 2019).

Policymakers are forced to adapt social security systems to these population dynamics. Industry experts from SwissLife and UBS argue that innovation in pension systems is needed in the pursuit of greater flexibility and a multi-tiered approach. This implies that the retirement age is no longer fixed, and that security schemes must differ by individual features. A multi-tiered structure aimed at diversifying income sources to up to three different tiers would require greater individual responsibility. This must be accompanied by the right incentives (e.g. tax benefits) but also innovation in the financial markets (e.g. pension bonds) (SwissLife, 2016; UBS, 2018, pp. 20–23).

In addition to responding to the consequences of low fertility, governments might also address the issue of low fertility itself. Incentives to increase fertility include providing monetary and non-monetary support to families and reducing the perceived disadvantages of women at work (*note: this will be discussed in another article in the booklet*).

Technological

The declining labour supply will entail a shift within the macro-economy from labour reliance towards productivity reliance. This development is dependent on technological progress (European Commission, 2018, pp. 369–371). Furthermore, technologies may also support extended

working lives, thereby partly compensating for the reduced labour force.

At the same time, low fertility levels will result in the progressive ageing of the population. The rising share of older members of the populace demands new technologies to comfort and support them in the process of ageing (UBS, 2018, p. 26). This provides new opportunities for businesses.

This progress may make ‘old’ feel ‘a little less old’, undergirding the changes in social patterns and behaviours, as elaborated in the section on the social dimension.

Environmental

One construct relating demographic changes to environmental changes is the Population-Affluence-Technology (PAT) model. It equates the human impact on the environment (I) to the product of population (P), affluence (A) and technology (T).

The model suggests that population growth has a negative impact on the environment. Historically, population growth – and the economic growth that has accompanied it – has led to the overconsumption of resources and the pollution of the environment, which is in line with the model’s predictions (UBS, 2018, p. 43).

In consequence, the expected slowdown of population growth should benefit the environment. However, this only holds true for Europe. The world’s total population is expected to increase from 7.7 billion today to 10.9 billion by the end of the century, further threatening the environment (UN, 2019, p. 13).

Legal

In the legal sphere, both demographic transition and the incentives designed to address demographic change require legal implementation. Without going into further detail, relevant legal codes include:

- Employment law (e.g. anti-age-discrimination)
- Tax law (e.g. tax incentives)
- Social law (e.g. social security)
- Health law (e.g. costs of health care)
- Family law (e.g. parental benefits)
- Insurance law (e.g. family insurance)
- Marriage law (e.g. marriage incentives)
- Medicinal law (e.g. euthanasia)
- Abortion law (e.g. restriction of abortion)
- Corporate law (e.g. corporate governance)

Conclusion

In the coming decades, persistent low fertility will expose Europe to irreversible demographic transition. The implications are complex, interdependent and multi-faceted.

With ongoing low fertility, Europe's population growth is expected to slow, leading to a declining population in the long term. The population structure is subject to progressive ageing. Rising old-age dependency ratios will challenge Europe's social contract. At the same time, the decline in the working-age population will shift the economy from labour reliance towards productivity reliance – assuming growth objectives can be met.

As a result, governments are expected to face lower tax revenues and soaring demography-related expenditures. This poses challenges to their fiscal health.

The environment is expected to benefit from the slowdown in population growth in Europe, but unimpeded growth elsewhere continues to be a cause for concern.

Combating the challenges of demographic change will require incentives addressing the issue of low fertility itself as well as policy adjustments tackling the direct consequences of these population dynamics. Technological progress is a necessity in compensating for the declining working-age population and easing the process of ageing for the older parts of society.

Key References

German Federal Ministry of Finance [BMF]. (2019). *Federal Budget 2018*. Retrieved from: <https://www.bundeshau-shalt.de/#/2018/soll/ausgaben/einzelplan.html>

European Commission. (2018). *The 2018 Ageing Report. Economic & Budgetary Projections for the 28 EU Member States (2016-2070) [Institutional Paper 079]*. Retrieved from: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en

European Commission. (2019). *Population Structure and ageing*. Retrieved from: https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing#Past_and_future_population_ageing_trends_in_the_EU

OECD. (2019). *Adapting to Demographic Change [G20 Employment Working Group Working Paper]*. Retrieved from: <http://www.oecd.org/g20/summits/osaka/OECD-Ageing-and-Demographic-change-G20-JPN.pdf>

Roser, M., Ritchie, H. & Ortiz-Ospina, E. (2019). *World Population Growth [published: Our World in Data]*. Retrieved from: <https://ourworldindata.org/world-population-growth>

SwissLife. (2016). *Redrafting the social contract*. Retrieved from: <https://www.swisslife.com/en/home/hub/redrafting-the-social-contract.html>

UBS. (2018). *Demographic change. It's time to face up to the implications*. Retrieved from: <https://www.ubs.com/global/en/wealth-management/chief-investment-office/investment-opportunities/longer-term-investments/2019/demographic-change-investment-opportunities.html>

United Nations [UN]. (2019). *World Population Prospects 2019. Data Booklet*. Retrieved from: https://population.un.org/wpp/Publications/Files/WPP2019_DataBooklet.pdf

World Bank. (2019). *Population Estimates and Projections*. Retrieved from: <https://databank.worldbank.org/source/population-estimates-and-projections>



Opportunities arising from demography for business & society

D. Our life courses: What will change? What will remain unchanged in the ongoing era of longevity?

1. Demographic Change in Switzerland – How could it be in 2060
Submitted by Lucas Binggeli
2. Demographic Change in Switzerland – How could it be in 2060
Submitted by Patrick Friedli

E. Does digitalization/information technology/artificial intelligence contribute to make longevity a sustainable achievement?

1. Does technology contribute to make longevity a sustainable achievement?
Submitted by Luiz Fernando De Arruda
2. Growing old in a digitized world
Submitted by Sandro Leugger
3. How can technology enable longevity to a sustainable achievement?
Submitted by Leon Marburger

Demographic Change in Switzerland – How could it be in 2060

Management Summary submitted by Lucas Binggeli

Introduction

The 100-year life becomes reality, over half of today's children in developed countries such as the US, UK, Germany, Switzerland or France will crack the magic three-digit limit (University of California and Max Planck Institute, 2017). Responsible for this longevity are three main drivers: knowledge, science, and technology which increased steadily the life expectancy over the last 200 years (Cutler, Angus, & Lleras-Muney, 2006). Whether a longer life is perceived as a gift or as a burden depends on how humanity copes with it. Certain is that the classical 3-phase model of childhood, employment, retirement is outdated, and more agile solutions must be found in order to live a happy, fulfilled, financially stable life in the era of longevity (Gratton L., 2011, P. 127f).

However, there are big differences in life expectancy and involved issues among countries. Therefore, the author focuses on this paper only on the implications a 100-Year life in Switzerland can have. To be more precise on how the life course could look like in 2060, considering the information we have today. This is the year when people born in the mid-nineties (the birth period of most students of this course) would officially retire in today's system.

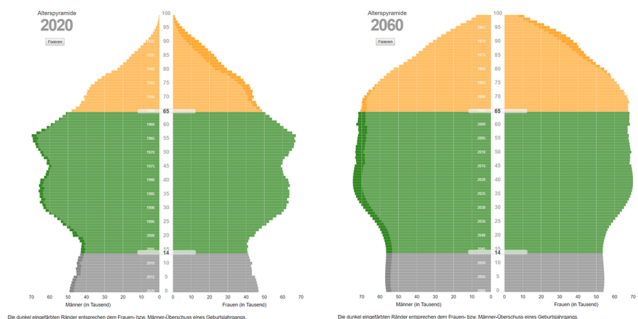
About longevity

The life expectancy at birth has remained relatively stable at 24 years for more than ten centuries. However, since the early 1840 one could observe a stable increase of two to three years every decade. Without a sign of a slow-down, this phenomenon is assumed to continue. A child born today in France, Italy or the US has a 50% chance of living to 107 (Gratton & Scott, 2016, P. 16f.). The main drivers of longevity are knowledge, science, and technology. The improvement of these factors leads directly to better healthcare and indirectly to higher overall productivity, which enables healthier living conditions, nutrition, housing and sanitation (Cutler, Angus, & Lleras-Muney, 2006). Given that, it is understandable why even today big inequalities can be observed between more and less developed countries. For example, the citizens of Japan have in 2019 an average life expectancy of 84 years, in contrast, the inhabitants of the Central African Republic have statistically seen 30 years less to live. This enormous discrepancy can be explained by the relatively high child

mortality rate (12.2%) and poor health conditions in the Central African Republic. To clarify, many developing countries that were suffering some years ago are catching up rapidly and life expectancy is increasing in all countries of the world (Roser, 2019).

Longevity in Switzerland

In 1960 life expectancy at birth was 71.2 years, today it is at 83.8 years and in 2060 it is expected to be around 92 years (Federal Statistical Office, 2019a). The combination of increasing life expectancy and stagnating birth rate are the reason for the aging society in Switzerland and have a significant impact on the relative age structure (Rufer & Groth, 2018). Figure 1 illustrates that in 2020 around 19% of the Swiss population are 65 years and above. 40 years later this number will rise to 29%. In absolute numbers this is an increase from 1.7 million to 3.3 million; this amounts to a percentage increase of +94%, almost a doubling (Rufer & Groth, 2018 and Federal Statistical Office, 2019a).



Childhood in 2060 (0-14)

Figure 1-Age Distribution 2020 – 2060 (Federal Statistical Office, 2019a)

In 2060 the median age of Swiss citizens is estimated to be 47.8 years. This is 5 years older than in 2020 (Federal Statistical Office, 2019a). This development towards an aging population can also be observed in figure 1. The share of children under 14 stays stable around 14% over those 40 years. Meanwhile the relative portion of people between 15-64 declines from initially 67% to 59%. As discussed, the population of people over 65 grows significantly (Federal Statistical Office, 2019a).

This has several implications first, the image of society will be different. More old people will be present in all situations in life. For example, the majority of grandparents will still be alive, active

and could take care of their grandchildren. This could have a vast impact on the childcare system and foster a three-generation household where both parents work. Why it is likely that both parents will work will be discussed under the title “Old Adults in 2060”. Longevity could also influence the subjects in school. Given that the gap between young and old will rise, children may need to learn how to handle older people in certain situations. However, there are no studies or valid assumptions that childhood will be dominated by longevity.

Young Adults in 2060 (15-24)

Every young adult must make important decisions which set the course for the future. In Switzerland, one such decision is whether to do an apprenticeship or attending university. In 1996 only 22% of society had tertiary education, today this number more than doubled. But more importantly, there is no sign that the trend is leveling off, it is estimated that in 2040 more than 55% will hold a tertiary degree (Federal Statistical Office, 2019b). But why is this important and what does it have to do with longevity?

As seen, it is a fact that many people will live longer and in order to finance the additional years, people will most probably need to work longer (Gratton & Scott, 2016, P. 47). The approach to do an education and afterward work in this job till retirement without attending any major continuing education will be outdated in 2060 (Gratton L., 2011). People will see it as an opportunity to change career paths during work life and experience new challenges in different settings. The Swiss education system supports already diverse career paths, but more flexible, individual solutions will be required in 2060 (WDA Forum, 2018). A point to consider when choosing a field of study is that due to rapid changes in technology and business environment, customer preferences will change, and new ecosystems will emerge. It is not possible to predict how the economy will look like in 2060, but it is likely that industries that profit from longevity gain in importance.

Nevertheless, not all working people will have a high education level and follow the lifelong learning idea. This has two main implications. First, there is a strong correlation between education level and life expectancy. In Switzerland, the gap can be estimated somewhere around 5 years (OECD, 2017). Secondly, the social gap between educated and less educated people will become more significant.

Adults in 2060 (25-65)

Adults in 2060 will face many issues due to the 100-year life. Saving for retirement becomes more central, periods of work more extensive and job requirements change over time. However, it would be non-human to focus only on financial aspects and to see adults as labor who make sure that the system does not collapse (Gratton & Scott, 2016, P. 67). Without a doubt, money is important but for most people, a good life includes supportive friends, a great family, and good physical and mental health. There are different concepts that try to explain how happiness in life is defined and how one can achieve it (Rufer & Groth, 2018). The approach of Gratton and Scott focuses on how to plan a long, happy and productive life in the era of longevity. They state that it will be key to find a balance between money and so-called intangible assets as this creates substantial synergies (Gratton & Scott, 2016, P. 67ff). Intangible assets are for example relationships, skills, knowledge, mental and physical health.

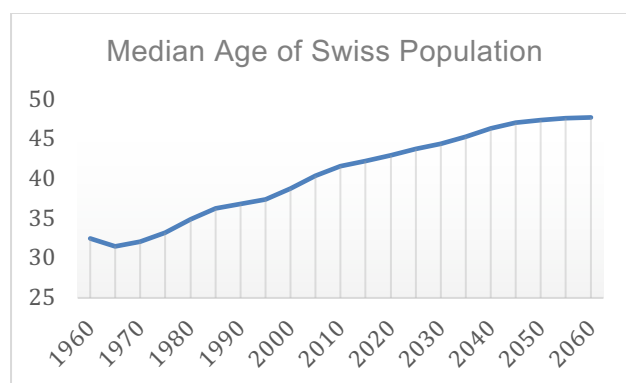


Figure 2 - Median Age Distribution 2020 – 2060 (Federal Statistical Office, 2019a)

The political system is another intangible asset. As seen in figure 2 the median age of Swiss citizens is estimated to be 48 years in 2060 (Federal Statistical Office, 2019a). When excluding people without the right to vote the mean would rise over 55 years. This could lead towards a political system which does not represent the concerns of younger citizen enough. For example, votes on long-term investments and reforms which lead to a reduction of pensions could be rejected since older people have other political preferences and the majority of voting rights (Winkler, 2015). A current example can be observed in the vote on Brexit. Most people under 40 years wanted to stay in the EU, while citizen over 40 years had the tendency to vote for a leave (Umunna, 2018). A solution to this problem could be to cluster voters by three age groups (e.g. 18-30, 31-50, 51-100+). Each group would have 1/3 of voting

power and therefore votes of younger citizen would be weighted more.

Old Adult in 2060 (66-80)

One of the obvious questions of a longer life is how to finance it. Today's retirement system with its three pillars was established in 1972 and is enshrined in the federal constitution. It was composed considering the age structure of this time. In 2060 there will be relatively more retirees (+16%) and relatively fewer people in the working-age (-4%) compared to the early seventies (Federal Statistical Office, 2019a). This demographic movement brings the current system to its limits and new approaches must be found. The two most likely solutions are either to increase retirement age or people must save more money during their work-life (Gratton & Scott, 2016, P. 27f).

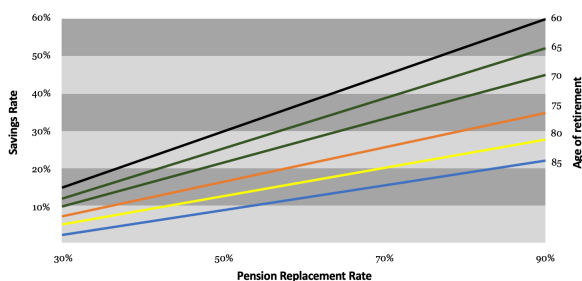


Figure 3 - Savings rate, pension replacement rate and retirement age for a 100-year life (Gratton & Scott, 2016, P. 42)

Figure 3 shows how much individuals would have to save in order to get certain percentage of their average income at a certain retirement age, in a 100 years life scenario. This means a person who intends to retire at 65 years would have to save 25% of the monthly income in order to get a 50% pension of their final salary (Gratton & Scott, 2016, P. 41f). As to save more during work life is not feasible for everyone (e.g. low salary, family) the second solution is more probable. It is important to understand that Swiss people will age healthier in the future. This means elderly people will still be in good mental and physical shape and therefore are able to have more productive working hours over the lifetime (O'Connor, 2016). This does not mean that citizens must work a full-time job until 80 in order to finance their retirement. Advantages of more flexible models, where people can reduce their workload and retire continuously, are more autonomy and control. New models can also foster intrinsic motivation (Span, 2018). Another approach would be a retirement defined by contribution years instead of a fixed age. This would have the benefit that people with a lower education such as construction worker and farmers

could retire earlier than studied people which most often don't work physically (Fischer, 2019)

Pensioners in 2060 (81-120)

In comparison to 2020, citizens haven in 2060 on average a decade more to live (Gratton & Scott, 2016, P. 16f.). This implies that pensioners still will be spry in the early stage of their evening of life.

In the last few years, companies became more aware of the profitable target group and offer for example travel arrangements, adjusted to the needs of pensioners (IBIS World, 2017)

Furthermore, non-medical service providers are on the rise and support elderly people to age in dignity. Special senior apartments and so-called caregivers are just two examples (Groth, Eine Frage der Würde, 2013). It is likely that in 2060 the range of offers will be even more diverse.

To relativize, the before mentioned multi-generation households in 2060 is not this probable. Scholars can observe weaker family ties and to take care of older family member is often perceived as a burden (Groth, Eine Frage der Würde, 2013). Especially chronic diseases like dementia affect not only the sick person but the whole personal environment. To witness a close person losing control is often described as heart-breaking. Additionally, there are also high financial expenses that either must be carried by the state or through public sources (Groth, Klingholz, & Wehling, 2009).

Conclusion

Longevity has impacts on all stages of life and will change the absolute and relative age structure of Switzerland. This has various implications: Children can spend more time with their grandparent and young adults will have the opportunity to change career paths during work life. In order to finance longevity new retirement models, must be found, adapted to the needs of an older workforce. However, to live a longer life not only money is needed but also intangible assets like supportive friends, a great family, good physical and mental health. In the future pensioners will still be active and non-medical service providers will offer a wide range of services. Due to weaker family ties and the increasing risk of suffering from a severe disease, it is likely that public institutions must take care of retirees at the end of their life. These costs must be carried by the state or through public sources.

Key References

- Cutler, D., Angus, D., & Lleras-Muney, A. (2006).** "The Determinants of Mortality" *Journal of Economic Perspectives*, 20 (3): 97-120.
- Federal Statistical Office. (27. October 2019a).** *Bevölkerung der Schweiz*. From [media-stat.admin.ch:](https://www.media-stat.admin.ch/) <https://www.media-stat.admin.ch/animated/chart/01pyramid/ga-q-01.03.02-dashboard.html> retrieved.
- Federal Statistical Office. (29. October 2019b).** *Scenarios for the population's educational level*. From [bfs.admin:](https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/system-scenarios/scenarios-population-level.html) <https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/system-scenarios/scenarios-population-level.html> retrieved
- Fischer, P. A. (31. October 2019).** *Und was ist, wenn wir bald 110-jährig werden?* From NZZ: <https://www.nzz.ch/wirtschaft/und-was-ist-wenn-wir-bald-110-jaehrig-werden-ld.1518513> retrieved
- Gratton, L. (2011).** *The shift. The future of work is already here*. London: Collins.
- Gratton, L., & Scott, A. (2016).** *The 100-Year Life - Living and Working in an Age of Longevity*. United Kingdom: Bloomsbury.
- Groth, H. (11. December 2013).** *Eine Frage der Würde*. From [demographic-challenge:](http://www.demographic-challenge.com/demographic-change-in-switzerland.html) <http://www.demographic-challenge.com/demographic-change-in-switzerland.html> retrieved
- Groth, H., Klingholz, R., & Wehling, M. (2009).** *Future demographic challenges in Europe. the urgency to improve the management of dementia*.
- IBIS World. (17. November 2017).** *Booming: Industries benefiting from the aging population*. From [ibisworld:](https://www.ibisworld.com/industry-insider/analyst-insights/booming-industries-benefiting-from-the-aging-population/) <https://www.ibisworld.com/industry-insider/analyst-insights/booming-industries-benefiting-from-the-aging-population/> retrieved
- O'Connor, P. A. (30. November 2016).** *A 100 year life and what It means for the world of work*. From PWC: https://pwc.blogs.com/the_people_agenda/2016/11/a-100-year-life-and-what-it-means-for-the-world-of-work.html retrieved
- OECD. (2017).** *Life expectancy by sex and education level*. Paris: OECD Publishing.
- Roser, M. (23. October 2019).** *Life Expectancy*. From [Ourworldindata:](https://ourworldindata.org/life-expectancy) <https://ourworldindata.org/life-expectancy> retrieved
- Rufer, N., & Groth, H. (June 2018).** *„Ein gelingendes Leben“ - Was ist darunter zu verstehen?* From [demographic-challenge:](http://www.demographic-challenge.com/files/downloads/7b7e1be7d2e88b7dac7d5a7cf2ac32a4/ein-gelingendes-leben_paper.pdf) http://www.demographic-challenge.com/files/downloads/7b7e1be7d2e88b7dac7d5a7cf2ac32a4/ein-gelingendes-leben_paper.pdf retrieved
- Span, P. (30. March 2018).** *Many Americans Try Retirement, Then change Their Minds*. From [Nytimes:](https://www.nytimes.com/2018/03/30/health/unretirement-work-seniors.html) <https://www.nytimes.com/2018/03/30/health/unretirement-work-seniors.html> retrieved
- Umunna, C. (25. June 2018).** *When you see how different generations voted in the Brexit referendum, you realise how important it is to change perspectives*. From [Independent:](https://www.independent.co.uk/voices/politics-generation-uk-brexit-labour-conservatives-young-vote-a8416271.html) <https://www.independent.co.uk/voices/politics-generation-uk-brexit-labour-conservatives-young-vote-a8416271.html> retrieved
- University of California and Max Planck Institute . (2017).** *Human Mortality Database*. Berkley, USA.
- WDA Forum. (2018).** *Online Survey. 225 Personen der Generation X in der Schweiz*.
- Winkler, H. (18. June 2015).** *How will ageing populations affect politics?* From [weforum:](https://www.weforum.org/agenda/2015/06/how-will-ageing-populations-affect-politics/) <https://www.weforum.org/agenda/2015/06/how-will-ageing-populations-affect-politics/> retrieved

Demographic Change in Switzerland – How could it be in 2060

Management Summary submitted by Patrick Friedli

Introduction

Demographic change is a topic that is often neglected by the majority of society. It is a continuous long-term development influencing our present and especially our future life. Therefore, this paper will give an overview of the main changing aspects in people's lives that will arise from the demographic movement, with special focus on a 100-Year Life in Switzerland. The increase in life expectancy, Switzerland experienced in the past decades, marks a significant factor in demographic movement with many consequences. This demographic shift will shape Switzerland's future society. In this paper, the currency of the classic 3-phase model of youth, family and work and retirement will be questioned in order to find more agile solutions for upcoming challenges. The foundation of this paper lies on the scientific facts about demographic movement and assumptions how a life course could be like in 2060. To bring a practical aspect in this paper, a group of high-level executives in the life science and pension sector has been interviewed about their opinion regarding the future. Some assumptions made in this management summary are based on insights in their opinions.

Demographic movements in Switzerland

Over the past decades, the life expectancy of Switzerland has experienced a significant increase. While people born in 1960 had an average future lifespan of 70 years, the expectancy in 2060 is forecasted to be at 89 years. The fertility rate does not follow this trend and remains steady with a birth rate of 1.6 in Switzerland. (Federal Statistics Office, 2019a)

Responsible for this development are science, technology and the knowledge to apply these factors. As a result, Swiss people age more healthily due to well-balanced nutrition, increasing physical activities and access to world-class healthcare products (Cutler, Angus & Lleras Muney, 2006). This leads to a growing gap between numerical age and biological age. Whereas the numerical age is the number of years a person has been alive, the biological age refers to the status of how old a person seems. On average, the gap between biological age and numerical age has grown 5 years per generation in the last decades. Consequently, people can be more productive over their lifetime as they remain in better shape and therefore are able to have more productive hours (O'Connor, 2016)

Questioning the status quo of the current systems in Switzerland

Education

Even though education is already a fundamental part of Switzerland's society, the demographic change will force people to deal more with it. Due to the extended life course and the fast-changing economy, individuals constantly have to engage themselves with their environment. As a result, the future education system will not end after secondary school or after university. There will be options provided that enable life-long possibilities for further education. People with high education in Switzerland tend to live 6 years longer than those with low education (OECD, 2017). Therefore, the Swiss education system needs to be adapted to those circumstances and should give everyone the same possibility to participate in education. Otherwise, the gap between high and low education level will increase even more, which would lead to greater inequality in the country (Lutz, Butz & KC, 2014, p. 14-17).

Pension System

While the retirement system today is set up to work for a numerically balanced society, the demographic movement brings this system to a disequilibrium. An increasing burden on contributors to the statutory pension scheme will happen due to the growing number of retirees. Whereas in 1970, there were 3 people in the labour force for every retired person, there are only 1.8 people in the working population per retiree today (Federal Statistics Office, 2019a). Not only the movement in the different society's age layers is a cause for the forthcoming financing bottleneck, but another reason is also the average life expectancy which increased during the last decades. Therefore reflection and reorientation will be of more importance to organize the life phase of retirement.

As a consequence of the 100-Year Life, the utilization period of pension payments will be around 35 years for every second person born today. This number has more than tripled compared to a person born in 1945, who benefited on average 10 years of retirement payments (Gratton, 2016, p. 33-41). With this enormous increase of years where retirees receive their pension disbursement, the current pension system will not be existing in this form in the future anymore. Swiss politicians do discuss this problem, but at the moment, they only want to address the age of

retirement or the amount of paid out annuity (Schäfer, 2019). Both solutions are dependent on the government, where politicians need to implement legislation regarding the pension system. The main aspect, why pension system adaptations lag behind, can be traced back to relatively short terms of office in the Swiss parliament, compared to the long term challenges of the demographic movement (Schäfer, 2019). Actions regarding the pension system are accompanied by restricting the current system, which will most probably not lead to re-elections of the executing politicians.

Voting Systems

The Swiss voting system is also confronted with new challenges. The median age of people who are allowed to vote in 2060 is about 55 years (Federal Statistics Office, 2019a). This indicates an excessive voting power for older people, which could lead to an underrepresentation of the concerns of younger Swiss citizens. Initiatives about restricting the pension system could for example then be rejected because of the voting power and the interests of older people who are directly affected. This trend has already reached other countries in Europe and can be observed in the Brexit voting. Whereas most of the people under 44 wanted to stay in the European Union, the voting still got accepted due to the voting power of people over 44 (Curtice, 2018). One solution against this problem could be clustering voters into groups. For instance, there could be different groups defined by their age (e.g 18-35, 36-55, 56+). Each group would then have a voting share of 1/3 of the total voting. With this approach, there may be a chance to involve more the opinion of young people in the political process.

Changes in life courses 2060

Childhood

While the share of children under 14 years will remain stable over the next 40 years, the population stratum of people over 65 will grow from currently 19.1% to 29.5% in 2060. This also means a significant decline in the relative share of people between the age of 15 and 64 of around 10%. (Federal Office of Statistics, 2019) This change in society's composition bears implications on the parenting of children. The increasing number of older people could result in a changing childcare system, where grandparents and even great-grandparents want to spend more time with the children. Involving the grandparents could also be an intention of the parents in order to shift capacity from the family life to the work-life. A changed pattern of the family with a

three-generation household could then be the result of this as well as a new role distribution within families.

Young adults

The biggest change in the life course of young adults will most likely be education. As discussed above, individual education will henceforth remain the whole lifespan and will not only be based on school attendance in the youth. The basis for this lifelong education is set in the early stage of life, for example with the decision to get a university degree. In the last 25 years, the number of university graduations has doubled in Switzerland. According to the Federal Statistic Office, this trend will continue. It is estimated that in 2040, more than 55% of the people will finish a tertiary education in Switzerland (Federal Statistics Office, 2019b). The decision to graduate could be economically important when it comes to planning future work-life. Earlier generations tended to spend their working life in one type of work (Gratton, 2011, p. 320). As the duration of work-life will extend to maybe 60 years, switching the career path is a possibility that many individuals will consider. The demographic movement is also a topic which affects the labour market. Due to the increasing number of old people, the healthcare sector will grow (Federal Statistics Office, 2019c). It can be inferred that education will not only take part in the youth but rather a development woven into different periods through the work-life. Nevertheless, the guiding foundation for the education career will most probably still be defined in the youth. The rapid changes in technology, the business environment and the change in customer preferences will most probably change until 2060. Therefore those points are worth considering when it comes to choosing a field of study

Adults in work-life

As a consequence of the pension dilemma, the citizens are indirectly responsible to organize the main part of their own pension and fund money themselves. Figure 1 exemplifies how much money a person must save in order to retire at a certain age. Under the circumstances of a 100-Year Life, an individual would need to save around 25% of the salary in order to live on 50% of its latest salary. And that 25% is only intended to be saved for the pension. Other expenses like the payoff of a mortgage are not included in that figure. It is hard to imagine to save up such a big amount just for retirement, especially for people who have to feed a family.

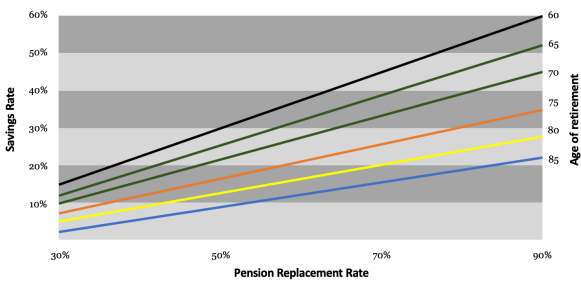


Figure 1: Savings rate and retirement age for a 100 year life (Gratton & Scott, S. 42 2016)

Money and professional careers will certainly be an essential aspect, but the private life with its free time will be a central focus in most people's life. To find the balance between money and intangible assets will be one of the main challenges for adults in work-life (Gratton & Scott, 2016, p. 67-69). Additionally, better physical and mental health enhance performance in professional life. This means maintaining relationships and going for sports is one necessity for a happy and productive life. Therefore, employers should provide as much flexibility as possible.

The old-age workforce

Due to the current pension dilemma, people need to work longer or need to save more money during their work-life. On the other side, with increasing lifespan, people have the ability to work longer and accordingly have more productive working hours (O'Connor, 2016). This does not necessarily mean that people have to work full time until they are 80 years old to finance their pension. The solution could rather be a model where people start to retire transitionally. Such a retirement could start at the age of 55 with a continuous reduction of working time until the age of 75 with the entry to the final retirement. This model has many advantages, for example could people slowly get used to retirement, a status many people struggle with. Also, older people are looking for more autonomy and control over the pace of their work. They also work more for impact than just paychecks. This mindset change to work for a meaningful cause is one incentive, why people intrinsically will work longer (Span, 2018).

The old-age workforce is in transition to retirement. They will reach their retirement within the next years. The so-called baby boom generation, which is born in the years from 1946 until 1964, is now the old-age workforce. They will end their professional careers soon with the entry to their retirement with 65. As the term baby boomers already implies, this generation is characterized by its high birth-rate compared to other generations.

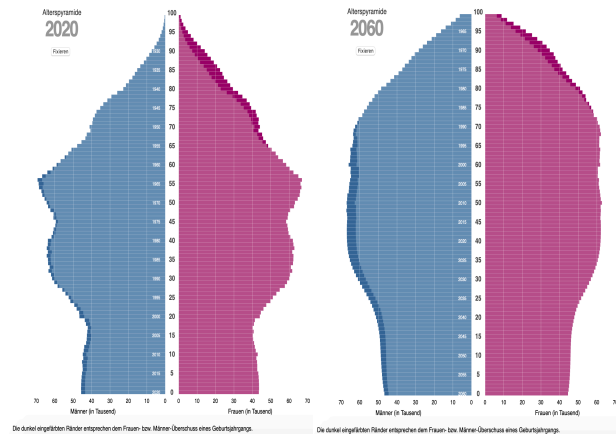


Figure 2 Age Distribution 2020 – 2060 (Federal Statistics Office, 2019a)

Figure 2 shows the age distribution of the current society in Switzerland. It visualizes that the amount of people retiring is much higher than the number of people moving up to working age. This movement is one cause of the pension dilemma Switzerland will experience until 2060. However, in the year 2060, the demographic structure of Switzerland will settle on a steady level, as shown in figure 2. This also means that the pension topic will most probably solve itself, but until 2060 it is going to be a big challenge.

The retirement

Not only the children but also the retired people will be affected by the family image of 2060. As discussed before, three-generation households could be more common and the grandparents could be highly involved in the plans of their children and their families. Their role in the family will become more central, which could also give them a certain structure in their daily life.

With advanced age, retirees will also be confronted with more health-based problems. Even though the people live longer, at a time, their bodies will still show appearances of age. Particularly chronic diseases will be serious threats for older people. Dementia is one example which stands out as severe illness. Not only is the sick person affected, but also the family and friends who will experience the decreasing health condition of their beloved one. There is also a high financial burden, which has either to be carried by the state or through public sources (Groth, Klingholz Wehling, 2009). How the body reacts to a 100-Year Life is still not properly investigated and therefore remains a mystery at the moment, but there definitely will be changes in the health-care sector.

Conclusion

Longevity already changed societies in developed countries and definitely will continue to disrupt many existing systems, especially in Switzerland. This trend has several implications: the family picture will change, shifting career paths will occur more frequently and education will not be finished until retirement. In order to finance longevity, new retirement models must be developed and adapted to the needs of an older workforce. The economy will change and the adapting sectors will profit from the demographic movements. A 100-Year Life does not only rely on monetary values but also on intangible assets like a good physical/mental health, a surrounding with encouraging friends and a happy family.

Key References

- Cutler, D., Angus, D., & Lleras-Muney, A. (2006).** "The Determinants of Mortality" *Journal of Economic Perspectives*, 20 (3): 97-120.
- Curtice, J. (10th August 2018).** *How young and old would vote on Brexit now.* Retrieved 30 October, 2019 from: <https://www.bbc.com/news/uk-politics-45098550>
- Federal Statistical Office. (2019 a).** *Bevölkerung der Schweiz. Von media-stat.admin.ch.* retrieved 30 October, 2019 from: <https://www.media-stat.admin.ch/animated/chart/01pyramid/ga-q-01.03.02-dashboard.html>
- Federal Statistical Office. (2019 b).** *Scenarios for the population's educational level.* Retrieved from: <https://www.bfs.admin.ch/bfs/en/home/statistics/education-science/system-scenarios/scenarios-population-level.html>
- Federal Statistical Office. (2019 c).** *Gesundheitsstatistik 2019.* Retrieved from: <https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken/publikationen.assetdetail.1290-1900.htmlscenarios/scenarios-population-level.html>
- Gratton, L. (2011).** *The shift. the future of work is already here.* Lynda Gratton. London: Collins.
- Gratton, L., & Scott, A. (2016).** *The 100-year life.* Lynda Gratton and Andrew Scott. United Kingdom: Bloomsbury.
- Groth, H., Klingholz, R., & Wehling, M. (2009).** *Future demographic challenges in Europe. the urgency to improve the management of dementia.*
- Lutz, W., Butz, W. P., & KC, S. (2014).** *World population and human capital in the twenty-first century.* Oxford: University University Press
- O'Connor, P. (2016).** *A 100 year life and what It means for the world of work.* Retrieved 30 October, 2019 from: https://pwc.blogs.com/the_people_agenda/2016/11/a-100-year-life-and-what-it-means-for-the-world-of-work.html
- OECD. (2017).** *3 Health at a Glance 2017: OECD Indicators,* OECD Publishing, Paris. Retrieved from: https://doi.org/10.1787/health_glance-2017-en.
- Schäfer, F. (2019).** *Nach uns die Milliardenflut – die Schweizer Rentenpolitik ist ungerecht.* Retrieved 30 October, 2019 from: <https://www.nzz.ch/meinung/nach-uns-die-milliardenflut-die-schweizer-rentenpolitik-ist-ungerecht-ld.1493659>
- Span, P. (2018).** *Many Americans Try Retirement, Then change Their Minds.* Retrieved 30 October, 2019 from: <https://www.ny-times.com/2018/03/30/health/unretirement-work-seniors.html>

Does Technology Contribute to Make Longevity a Sustainable Achievement?

Management Summary submitted by Luiz Fernando De Arruda

1. Introduction

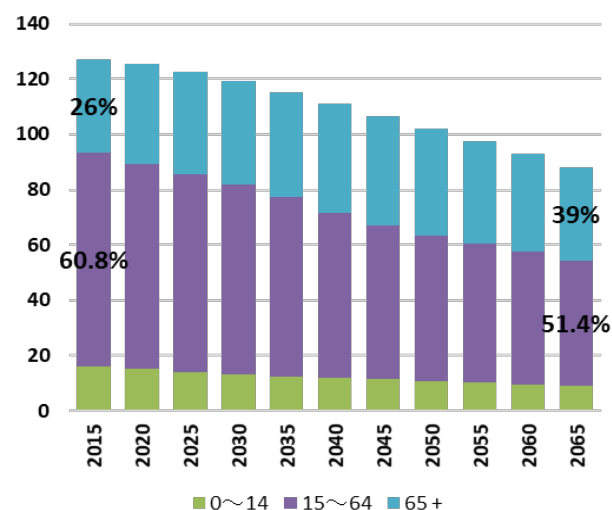
In the pre-modern world, life expectancy around the globe was estimated to be 30 years (Roser, 2016). In the 1800s, a series of technological developments emerged that forever changed the prospects of the human species. Toilets and advancements in sanitation saved millions of lives, synthetic fertilizers drastically reduced the dangers of malnutrition, and vaccines saved humanity from horrible plagues. In less than 200 years, a negligible amount of time in evolutionary terms, humanity managed to overcome most serious threats from the pre-modern world and today benefit from a life expectancy greater than 70 years (United Nations, 2015). Ironically, despite the tremendous benefits brought by innovation, one of the most pressing concerns now faced by humanity arises precisely from the advancements of longevity.

Longevity, paired with a decline in birth rates, is causing the composition of the world population to rapidly change. In fact, the portion of the population aged 65 and over is increasing more rapidly than any other age group (United Nations, 2019). In this paper, I define two problems that arise from this demographic trend: *insufficient productivity* and *unsustainable healthcare*. My goal is to define the most important ways in which technology can help humanity overcome these two problems and make longevity more sustainable. Following this introduction, section 2 briefly covers the topic of productivity, sections 3 extensively covers the topic of healthcare, and section 4 concludes the paper.

2. Productivity

In order to understand the economic problem that arises with strides in longevity, it is important to analyze the data in per capita terms. Considering the observed trends in the composition of the world population, if all else remains unchanged, theory predicts that the economic output per capita in terms of GDP would decline. This result follows from the fact that the share of the population occupied by active workers and infants is declining while the share of the population occupied by the elderly is rising. Japan is a country that fits this description particularly well, as displayed in Figure 1.

Figure 1. Expected Population Composition and Development, Japan by Age (in million)



From the National Institute of Population and Social Security Research (国立社会保障・人口問題研究所) 2017.

Assuming that the active working population is responsible for generating the most economic output, it follows that output per capita must decline. Fortunately, this model makes the unlikely assumption of *Ceteris Paribus*. It assumes that everything else in our society will remain unchanged, including our work culture, how society is organized, and technological developments.

The solution to the productivity problem can take many forms. A good example is the current change of the work-culture, as governments across the world are raising the legal retirement age. Among the EU Member States, the general retirement age is 65 years. Spain, Germany and France are expected to soon raise the retirement age to 67, while in Britain and Ireland the goal is age 68 (Finnish Centre For Pensions, 2019). However, the most promising solution to the productivity problem is technological innovation. Similar to expanding the retirement age, technology can enable the aging workforce to complete high-valued-added tasks until later in life. Digital collaboration tools facilitate work from home, advancements in healthcare promotes prolonged uncompromised vision and hearing, medical developments increase disposition and general healthy living, self-driving cars facilitate mobility, among many other technologies that support the aging workforce.

In addition to enabling older adults to work for longer, technology primarily increases productivity by increasing the efficiency of the workforce: it introduces new production methods and management techniques. Innovations related to artificial Intelligence (AI), 3D printing, internet-of-things (IoT), blockchain, biotechnology, and industrial robots have drastically increased the output produced by the private sector and will continue to revolutionize how businesses operate. In fact, in their recent paper “*Secular Stagnation? The Effect of Aging on Economic Growth in the Age of Automation*”, Dr. Restrepo and Dr. Acemoglu showed that not only there is no evidence that an ageing population leads to lower productivity per capita, but also that the opposite relationship may be true. They suggest that an ageing workforce may lead to more rapid adoption of automation technologies, which ultimately explains the higher levels of productivity observed in countries where the demographic trend is more pronounced (Acemoglu, D. and Restrepo, P., 2017).

3. Healthcare

In an influential paper published in the journal of Health Services Research, Dr. Warner and Dr. Alemayehu analyzed healthcare costs in the United States and found that nearly half of an individual’s healthcare costs are incurred during his/her senior years. They found that for people who live past the age of 85, more than one-third of lifetime healthcare expenditures accrue in the remaining years of life (Alemayehu B., Warner K.E., 2004). The distribution of lifetime healthcare costs, paired with the evident population ageing trend, creates serious sustainability problems. How can governments make sure that the elderly population has access to the resources that it needs, without compromising public spending in other domains? How can societies make sure that the supply of healthcare can keep up with the rising demand, so that all those in need can have access to proper care?

As is the case with productivity, there are many potential solutions to the healthcare problem. In part, governments must foster a fair and competitive healthcare industry, incentivize the adoption of healthy habits by the population, and perfect the financing dynamic of healthcare systems. However, the most promising solution to the healthcare problem is once again technological development. Specifically, technology will help cut healthcare costs and improve the quality of care in four ways:

1. **Prevention:** Reducing the demand for care.
2. **Cure:** Eradicating diseases.
3. **Care:** Facilitating in-home care.

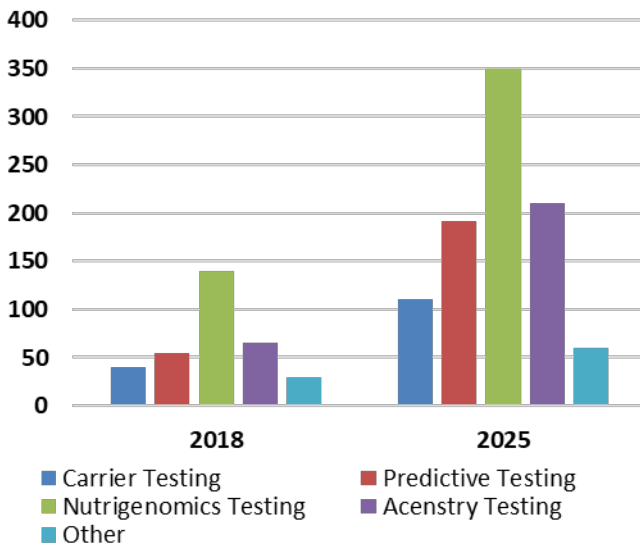
In the following sub-sections, I describe the reasoning behind each of the proposed methods and provide concrete examples of technologies that are contributing – or will contribute – to make healthcare a sustainable achievement in face of longevity.

3.1 Prevention

The most straightforward method to reduce healthcare costs is by reducing the need for medical procedures. A technology taking one step towards this goal is *preventive disease wearables*. Wearable devices are already widely popular in the realm of physical activity, but they have also recently started to contribute to the field of medicine. These devices, which range from wrist bands to headsets, are used to monitor the users’ health vitals, detect illnesses, collect biometric data, and even help with the patients’ diagnosis. According to the Centers for Disease Control and Prevention (CDC), chronic diseases accounts for approximately 90% of the \$3.5 trillion USD annual healthcare costs in the United States (Buttorff et.al. 2019). The use of preventive disease wearables makes it easier for doctors to determine the patient’s symptoms, reach a diagnosis, and steer patients-at-risk towards lifestyle habits that could prevent the emergence of chronic diseases.

Another technology that has the potential to revolutionize preventive care is *genomics*. Genomics is the field concerned with the structure, function, and mapping of genomes. Historically, DNA testing has been a technology unfamiliar to the general population, exclusive for laboratories and scientific research. However, it has recently become a widely commercialized procedure. The company called *Acestry.com*, a pioneer in the industry of ancestry and relationship DNA testing, had an estimated market value of \$3 billion USD in 2017 and has reported to have sold over 15 million DNA kits to customers. Most importantly, the application of genomics targeted at preventive care is gaining popularity and becoming accessible to the common public.

Figure 2. Genomics Market Size in the U.S. by Usage Category (in million USD)



From *Global Markets Insights*. "U.S. DTC Genetic Testing Market Size". Published September 2019.

Figure 2 shows the current and expected market size for different DNA testing categories. Predictive testing is expected to have the highest growth rate among the groups, approximately 20% CAGR until 2025. (Global Markets Insight Research, 2019). Genomics allow patients to acquire a complete understanding of their genetic composition, including genetic risk factors (e.g. genetic predispositions), and allow caretakers to respond with preventive measures years before any related illness emerge.

3.2 Cure

In addition to prevention, technology can help make healthcare more sustainable by eradicating costly diseases. The *variola* virus, the causer of *smallpox* disease, plagued humanity for nearly 12,000 years and is believed to be responsible for approximately 300,000,000 deaths (Flight C., 2011). In May of 1980, the World Health Organization (WHO) certified the eradication of smallpox - the first disease to have been deliberately eradicated by humans. Although vaccines are one of the most important discoveries of medicine, humanity is in the brink of a medical innovation that may be the most impactful to date. I am referring to *gene-editing*, the practice of inserting, deleting, and replacing DNA, ultimately modifying the genome of a living organism.

Gene-editing has a wide range of possible applications, from the most realistic and near-term (e.g. pest control) to the most far-fetched and futuristic (e.g. reviving extinct animals and designing babies). Most of gene editing today is done through a technology called Clustered Regularly

Interspaced Short Palindromic Repeats (CRISPR). A simple and yet useful analogy to how the technology works is a *molecular scissor*: doctors cut out two strands of DNA at a particular location of the genome so that bits of DNA can be added or removed.

To illustrate the power of CRISPR, one can think of Malaria, a disease that kills half a million people every year throughout sub-Saharan Africa. Scientists from Imperial College successfully completed an experiment where they implanted a deadly gene in *Anopheles* mosquitos – the transmitters of Malaria – that kills only female mosquitoes but that is passed on by both males and females from generation to generation. The experiment resulted in the complete extermination of the *Anopheles* mosquitos from the sample in as few as 7 generations (Kyrou et. al., 2018). One can reasonably expect that the experiment will soon be applied to exterminate Malaria as well as many other zoonotic diseases.

Although the application of gene-editing in pest control is promising, it is only the starting point of where gene-editing could be taking humanity. The technology is still in its infancy and extensive research must be completed before scientists can unlock the full potential of CRISPR. Nonetheless, as a concept, gene-editing has the potential to eradicate every genetic disease from existence, ultimately increasing the well-being of humans and alleviating healthcare expenditures.

3.3 Care

In sections 3.1 and 3.2 I described how technology will impact healthcare as a whole, via the prevention and cure of diseases. In this section I describe how technology can aid in caring for the elderly.

Technology primarily plays a role in elderly care by enabling in-home care, as opposed to in-hospital care. A recent study published in the *Journal of General Internal Medicine* showed that in-home healthcare leads to over 50% lower costs relative to in-hospital care (Levine et. al., 2018). Unlike hospitals patients, at-home patients don't need 24/7 labor available and don't incur expenses for occupying the hospital room, both of which are primary in-hospital costs. In addition, because of its convenience, in-home care is also preferred by most patients. It is evident that the adoption of homecare would be advantageous to both the financing of the healthcare system and to the well-being of patients. Therefore, the question that follows is: how is technology enabling in-home care?

While in the past in-home care was rarely an option, today portable health monitoring devices and improved communication systems (e.g. Tele-health) have made in-home care a reality. Remote monitoring sensors feed real-time patient data to doctors and nurses, warning caretakers in case any risk indication emerges. Tele-health apps allow patients to video conference with doctors on-demand, obtain prescriptions via the application, and schedule appointments. AI robots, as the ElliQ system displayed in Figure 3, paired with the Internet of Things (e.g. home appliances integrated to the virtual system), can assist the elderly in executing routine tasks and promote a more engaged and happier life.

Figure 3. ElliQ. AI-Driven Robot Developed by Intuition Robotics. Targeted at Elderly Care.



Finally, with the ageing world population, the market for age-tech - technology targeted at the population aged over 65 years - will continue to grow. As the market grows and becomes more lucrative, it attracts the private sector and triggers more innovation. In the future, we can expect age-tech to play a central role in elderly care and to continue facilitating in-home treatments, both improving the quality of life for the elderly and reducing the costs of care.

4. Conclusion

In this executive summary, I identified two problems that arise from the advancements in human longevity: *insufficient productivity* and *unsustainable healthcare*. In respect to productivity, I proposed that technological advancements enabling work until later in life and increasing industrial output will more than off-set the decline in GDP per capita predicted by longevity and low birth-rates. In respect to healthcare, I proposed that wearable devices, AI, tele-health, genomics, gene-editing, among other technologies, will revolutionize healthcare in respect to prevention, cure, and care, ultimately making healthcare more sustainable. Finally, it is important to note that both the problem of *insufficient productivity* and *unsustainable healthcare* will not be resolved by any individual solution proposed in this

paper, but instead by the joint influence of technological developments, structural change in our society, among other factors.

Key References

- Acemoglu, D., Restrepo, P. (2017).** Secular Stagnation? The Effect of Aging on Economic Growth in the Age of Automation. *MIT Department of Economics Working Paper No. 17-02*. Retrieved from: <http://dx.doi.org/10.2139/ssrn.2899142>
- Alemayehu, B., Warner, K.E. (2004).** The Lifetime Distribution of Healthcare Costs. *Health Services Research Journal* 39(3): 627-642. doi: 10.1111/j.1475-6773.2004.00248.x
- Buttorff, C., Ruder, T., Bauman, M. (2017).** Multiple Chronic Conditions in the United States. *Rand Corp.* Retrieved from: https://www.rand.org/content/dam/rand/pubs/tools/TL200/TL221/RAND_TL221.pdf
- Colette F. (2011).** Smallpox: Eradicating the Scourge. *BBC*. Retrieved from: https://www.bbc.co.uk/history/british/empire_seapower/smallpox_01.shtml
- Finnish Centre for Pensions (2019).** Retirement ages in different countries. Retrieved from: <https://www.etk.fi/en/the-pension-system/international-comparison/retirement-ages/>
- Global Markets Insight Research (2019).** DTC Genetic Testing Market Size. Retrieved from: <https://www.reuters.com/brandfeatures/venture-capital/article?id=137928>
- Levine, D.M., Ouchi, K., Blanchfield, B. et al. (2018).** Hospital-Level Care at Home for Acutely Ill Adults: A Pilot Randomized Controlled Trial. *Journal of General Internal Medicine* 33:729. <https://doi.org/10.1007/s11606-018-4307-z>
- Max R. (2019).** Life Expectancy. *Our World in Data*. Retrieved from: <https://our-worldindata.org/life-expectancy>
- National Institute of Population and Social Security Research (2017).** Population Projections for Japan (2017): 2016 to

2065. Retrieved from:
<https://fpcj.jp/wp/wpcontent/uploads/2017/04/1db9de3ea4ade06c3023d3ba54dd980f.pdf>

Porter, K., Sherman, A. (2017). Ancestry.com Is Close to Hiring Banks for 2017 IPO". *Bloomberg.com*. Retrieved October 28, 2019.

United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019. Retrieved from:

https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf

United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Ageing Report. Retrieved from:
www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015Report.pdf

Growing old in a Digitized World

Management Summary submitted by Sandro Leugger

Introduction Demographic change is undoubtedly one of the most impactful megatrends of the 21st century. A lot of this change is connected to the industrialization of countries. While African countries still try to reach a more industrialized state and are expected to experience a population explosion in the next decades. Other Regions like Europe, Northern America but also Japan and South Korea already went through this development and face decreasing fertility while people live longer and longer. This leads to a shift in population age with many upcoming challenges. How can we support our elderly with a diminishing workforce? How can we integrate them into society and avoid isolation? How can we achieve a graceful, happy healthy and long-lasting life for everyone? During our research, we were trying to find out if it is possible to tackle the upcoming challenges of one megatrend with the promising benefits of another megatrend namely digitalization. Can new technology help to make longevity a sustainable development? In this executive summary I will focus on productivity and home care. Two aspects where technology could have a huge impact on the upcoming challenges.

Productivity So before explaining how technology can contribute to solve this problem, I need to explain the problem itself first because the term productivity in the context of longevity can be interpreted in many ways. The core question I want to tackle is if technology can help us to support our elderly. Currently, there are intense discussions about rising retirement age, cutting pensions or increasing the contribution to public pension funds. These are all possible solutions to the same problem. In Europe in 1980 there were more than four working people per senior. In 2019 there are three and in 2050 there will be less than two (UN 2019). It becomes clear that it gets more and more difficult for the working force to support the elderly. But how can technology help with this issue?

To answer this question, I want to take a step back and look at the problem in a little more abstract way to understand it. Figure 1 is showing the current situation of the European economy. The left stacked bar is representing all the goods and services our workforce can produce (approx. equal to the GDP, trade is already included, and we ignore savings). The stacked bar on the right side is representing the consumption of the population which is distributed by the young, the middle-aged

workforce and the elderly.

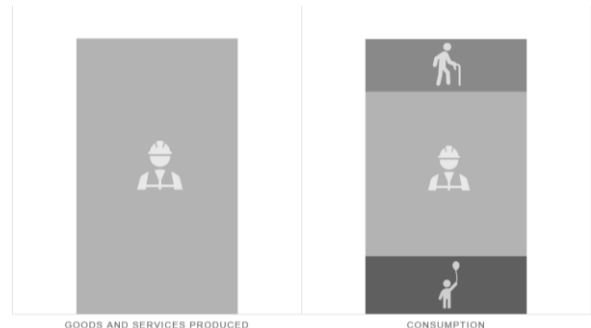


Figure 1: Model of European production and consumption of goods and services by demographic group 2020

Figure 2 is showing the same situation in 2050 with the change in demographics, if productivity per worker and consumption per capita stays the same. The workforce and the related production of services and goods is decreasing by approx. 15% while the whole population is decreasing by only 5% (UN 2019). This leads ceteris paribus to an imbalance.

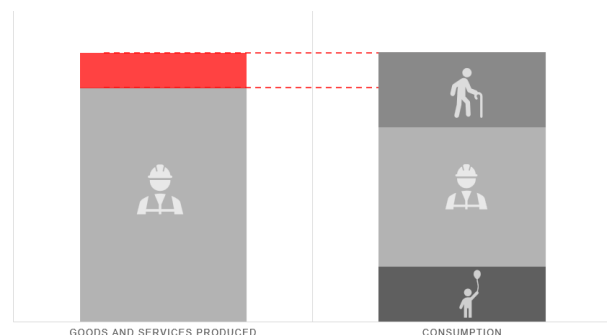


Figure 2: Model of European production and consumption of goods and services with 2050 demographics

There are different approaches to tackle this imbalance. The first most obvious would be to reduce consumption, which makes us on average poorer in 2050 than we are right now. Of course, there are a lot of discussions about distribution (cutting pension, paying more into pensions) but they basically only determine who will be hit the hardest by the costs of a growing elderly population. A different approach is to increase production by keeping elderly man and women in the workforce for longer (rising retirement age). Technology could certainly help to keep people productive for longer, by assisting them or by just keeping them fit and healthy.

Certainly, making the elderly more productive through technology will help to increase overall

productivity. However, in my opinion the biggest growth in production can be achieved by making the already available workforce more productive. Increased productivity of the available workforce through technology could help us in creating enough wealth to support the elderly and therefore making longevity a more sustainable achievement.

But how much can we increase productivity through technology? In the following paragraphs, I will give a short overview of technologies, which show a huge potential in increasing productivity in the area of communication, energy, production and logistics.

For communication, the most relevant factor is the interplay between three technologies, the internet of things, big data and artificial intelligence. Currently there are 26 billion devices connected to the internet. This number is expected to triple till 2025 (HIS 2016). These devices will be able to communicate with each other and produce an unseen amount of data. The data volume on earth is doubling every two years and artificial intelligence allows us to analyse this data in a more efficient way than ever before (IDC 2014). There are thousands of ways this can increase productivity. You could for example make your supply chain more efficient. Data intelligence allows you to accurately predict the demand for your product. This information can be sent to your smart factory which produces just in time. If you produce in a smart way you don't have a lot of waste and you need almost no inventory and way less workers for the same number of products.

There is also a revolution going on in the energy sector. Solar energy has become cost-competitive against fossil fuels in June 2019. This is a huge step towards independency from fossil fuels, which is an immense burden for our economy. Our dependency can be seen in the data. Every time oil prices rise significantly, the prices of goods across the board go up and consumption as well as production decreases (Rifkin 2018).

Regarding logistics and production, there is 3D printing and autonomous driving which could revolutionize those fields forever. Right now, 3D printing is mostly used for rapid prototyping and autonomous car maker seem to be stuck at level 4 autonomy. But as soon as the technology improves and the cost goes down, the workforce which is currently needed in these sectors will diminish (Rayna & Striukova 2015, Heinzman 2019).

All these new technologies will significantly contribute to the increase of workforce productivity. Technology is of course not the only factor. There are additional factors like education, organization and so on. However, all these dynamics combined will help our society to create more goods and services which can overcompensate for the imbalance in figure 2. The GDP of Germany for example is expected to increase by the factor of 1.55 by 2050 despite the shrinking workforce. The new situation is presented in figure 3. Finally, we can see that there is a lot of additional created wealth. More than enough to overcompensate for the demographic changes. Meaning that if we manage to significantly increase productivity per worker and distribute the additional wealth fairly, we would be better off in 2050 despite the demographic shift (PWC 2017).

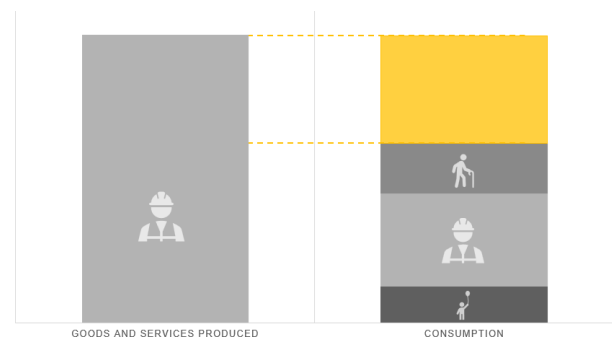


Figure 3: Model of European production and consumption of goods and services with 2050 demographics and GDP

Homecare 3 out of 4 seniors want to stay in their current residence for as long as possible. However, most of them do not see that happen in the future (Joanne & Vasold 2018). For most seniors home feels comfortable, safe and easy. In addition to that, they are able to stay within their local communities. Financially, a care assistant costs on average 4000 USD a month (44 hours of care). While this is a lot of money, a private room in a nursing home costs twice as much on average (Lynch 2018).

However, a new technology field is rising and promises to improve homecare and the independency of seniors. Gerontechnology or age-tech are terms under which thousands of entrepreneurs, designers, developers and engineer build technology that is designed to serve the elderly. In the following paragraphs I will introduce some selected start-ups in this field and explain how technology can help elderly to stay more independent for longer and make longevity a more sustainable achievement.

The first problem many start-ups and established firms are trying to address is the limited physical

strength and mobility. One example is a company called seismic. They are currently cooperating with a design company called fuseproject to develop an exosuit for the elderly. Figure 4 is showing the wearable technology, which is packed with motors, sensors and artificial intelligence and reacts to the natural movements of sitting up, and sitting down (Tuvie n.d.). There are several additional companies which are working on exosuits or skeletons for elderly people. Current users of this technology face a tradeoff between power and comfort but there could be a provider which is able to offer both in the next few decades.

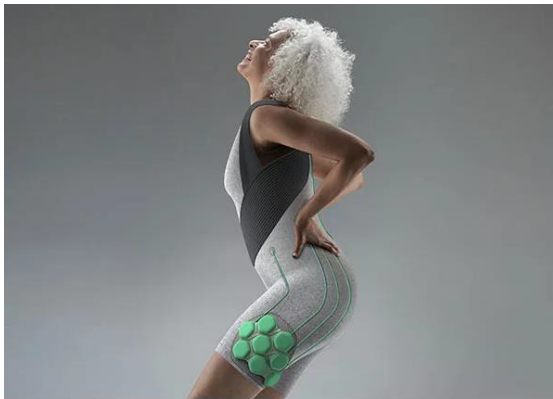


Figure 4: superflex (now seismic) aura powered suit

Like already mentioned there are also a lot of major corporation which are seeing the potential of the age-tech market. Google recently introduced a smart spoon that is helping people with physical tremor. The combination between sensors and microprocessor in the spoon are countering the shaky hands of tremor patients so they can enjoy their meal independently (Dormehl 2016). Technology seems to be able to help the elderly in almost every step of their daily routine. No matter if it is a bed that is helping people to stand up in the morning or robots that can cook or even help you to dress up (Gibson 2015, Panasonic n.d., Koser 2018).

Furthermore, technology can simplify and improve the health-related monitoring of seniors living by themselves. Sensors and microprocessor can be worked into textiles and monitor the state of health 24/7. If there are any health-related concerns the mini-computers in the textiles can immediately send a message to relatives or in a more serious incident directly contact a doctor or call an ambulance (Hexoskin n.d.)

However, inventions that enhance the independency of elderly people do not always

have to use advanced technology like microprocessor or artificial intelligence. A lot of improvement in homecare can already be achieved by simply re- designing houses and apartments for the needs of seniors using the currently available technology. Something as simple as a shower which you can sit in can be of great value for people with limited mobility.

The second problem which a lot of companies try to tackle with the help of technology is psychological health. Decreasing brain functionality through dementia is a widespread problem. Additionally, many elderly people tend to get isolated from society. A company which is trying to tackle this issue is ELLiQ. They developed a cute looking little robot which serves as voice assistant for seniors. Even if the short talk with the robot cannot replace a human conversation, it still can help seniors to feel less lonely. However, in my opinion the interaction with the robot itself is not the biggest benefit of the technology regarding the isolation problem. The voice assistant can also help to better connect with your loved ones. A lot of elderly men and women are overchallenged by new technologies like tablets, modern computers, smart phones and especially by the dozens of apps young people use to communicate. With a voice assistant they can easily message their friends and relatives without even touching a computer (ELLiQ n.d.).

Many examples in this executive summary have shown that technology can contribute to make longevity a more sustainable achievement. However, the benefits that old people can gain from technology do not only depend on the technology itself. Adaptability is significant factor as well. Technology for seniors needs to be designed in a way that they are willing to engage with it. Furthermore, the cost factor cannot be neglected. I already mentioned that it is possible to redesign a house or apartment to better fit the needs of an old person. However, to rebuild a house that way can easily cost over 100'000 USD (Lynch 2018). This applies for many of the other introduced technologies as well. The exosuit for example is not on the market yet but the price is expected to be high as well. So, the effort of scientists, designers and engineers around the world should not only go into creating new technologies but also in reducing the costs of currently available ones. The real sociological potential of age-tech can only be seen if the technology becomes affordable for a big percentage of seniors.

Conclusion Technology can greatly contribute to make longevity a more sustainable innovation. On the one hand it can help with the social security problem. If we can rise productivity per worker and create more wealth for everyone. We will also be more capable to provide a live without poverty for our elderly. On the other hand, technology specifically designed for seniors can help to increase their mobility and independency and it can also help seniors to feel less lonely by being able to better connect to their loved ones.

Key References

- Binette, Joanne and Kerri Vasold. (August 2018)** Home and Community Preferences: A National Survey of Adults Age 18-Plus. Washington, DC: AARP Research, Retrieved 31.10.2019 from: <https://doi.org/10.26419/res.00231.001>
- ELLiQ. (n.d.)**. Hi, I'm ElliQ. Retrieved 02.11.2019 from <https://elliq.com/>
- Gibson Megan. [time]. (April 14, 2015)**. Meet The Robot Chef That Can Prepare Your Dinner Retrieved 11.1.2019 from <https://time.com/3819525/robot-chef-moley-robotics/>
- Heinzman Andrew [How-To Geek]. (February 21, 2019)**. Why You Can't Buy a Self-Driving Car in 2019. Retrieved October 30. from <https://www.howtogeek.com/405158/when-can-i-buy-a-self-driving-car/>
- Hexoskin. (n.d.)**. INTRODUCING HEXOSKIN PROSHIRT Discover the new line of Smart Garments: Hexoskin ProShirt for Men and Women. Retrieved 01.11.2019 from <https://www.hexoskin.com/>
- IDC. (April 2015)**. The Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things. Retrieved October 26, 2019 from <https://www.emc.com/leadership/digital-universe/2014iview/index.htm>
- IHS. (November 27, 2016)**. Internet of Things (IoT) connected devices installed base world-wide from 2015 to 2025 (in billions) [Graph]. In Statista. Retrieved October 26, 2019, from <https://www.statista.com/statistics/471264/iot-number-of-connected-devices-worldwide/>
- Kooser Amanda. [cnet]. (May 14, 2018)**. This helpful robot is teaching itself to dress people. Retrieved 1.11.2019 from <https://www.cnet.com/news/robot-teaches-itself-to-dress-people-gown-georgia-tech/>
- Lynch Mike [CNBC]. (June 18, 2018)**. Aging in place vs. assisted living ... It's complicated. Retrieved 31.10.2019 from <https://www.cnbc.com/2018/06/14/aging-in-place-vs-assisted-living-its-complicated.html>
- Panasonic (2018)**. Rise Assisting Robot [Panasonic Resyone Plus XPN-S10601]. Retrieved 1.11.2019 from https://www.gmark.org/award/describe/47224/?locale=zh_TW
- PWC. (February 2017)**. The world in 2050. The long view: how will the global economic order change by 2050? Retrieved October 31. from <https://www.pwc.com/gx/en/issues/economy/the-world-in-2050.html>
- Rayna Thierry, Ludmila Striukova. (2015)**. From rapid prototyping to home fabrication: How 3D printing is changing business model innovation. Technological Forecasting & Social Change Vol. 102, p.1 -11.
- Rifkin Jeremy [VICE], (February 13, 2018)**. The Third Industrial Revolution: A Radical New Sharing Economy [Video file]. Retrieved October 28, 2019 from <https://www.youtube.com/watch?v=QX3M8Ka9vUA&t=1089s> (18:00)
- Tuvie. (n.d.)**. Superflex Aura Powered Suit Provides Extra Muscle Power for Elderly People. Retrieved 1.11.2019 from <http://www.tuvie.com/superflex-aura-powered-suit-provides-extra-muscle-power-for-elderly-people/>
- United Nations, Department of Economic and Social Affairs, Population Division (2019)**. World Population Prospects 2019, Retrieved October 23. from <https://population.un.org/wpp/DataQuery/>

How can technology enable longevity to a sustainable achievement?

Management Summary submitted by Leon Maximilian Marburger

1. Introduction

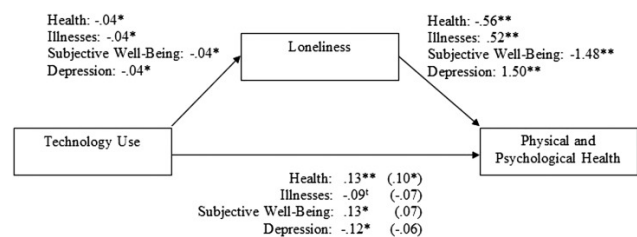
The world is facing a situation without precedent: In 2019, for the first time, there will be more people aged 65 or older than children aged four and under (United Nations, 2019). The social, economic and healthcare consequences will determine public policy in the next decade and will have an enormous bear on consumer lifestyles and purchasing decisions. In this context, the social integration of older persons has emerged as a topic of both scientific and public concern. Not only is it empirically proved that older people interact with fewer people, but they also increasingly struggle to cope with the emergence and rapid change of technologies (Max Planck Institut for Demographic Research, 1998). This paper will critically examine technology in making longevity a sustainable achievement.

Within the last half-century, all Western countries have experienced a substantial increase in older populations. While this increase is more common in developed countries, it can now also be seen in the developing world. Between 2000 and 2050, the share of the world's population that is aged over 60 years, will double from 11% to 22% (Dann, 2014). While it has taken France more than 100 years to increase the number of older adults (above 65) from 7 to 14%, it will take countries like Brazil or China less than 25 years to experience a similar increase (United Nations, 2015). In general, the growth of the ageing population is fueled by three factors — first, by the increasing life expectancy of the population. Despite the prominence of life expectancy in empirical research, it is surprisingly difficult to find a simple description of what it means, or how it can be measured. In general, life expectancy can be described as the average number of years a person can expect to live at birth. At present, life expectancy in Switzerland is among the highest in the world, mainly due to the sharp increase over the 20th century. Nevertheless, this increase has decreased recently. In the last two decades, life expectancy in Switzerland has increased from 76.3 in 1998 to 81.7 years in 2018 years for males in Switzerland. Second, fertility rates are continuously decreasing in developed countries. The end of the baby boom led to a severe decline in the number of children per woman. Since 1964, the fertility rate has dropped from 2.7 children to 1.5 children per woman in Switzerland (Bundesamt für Statistik, 2019). Third and lastly, the increase in migration from 2.8% in 2000 to 3.2% in 2013. Migration as a last resort to fuel

population growth comes along with an increase in the share of elderly since the percentage of individuals among international migrants that are above 65 is substantial (Zaiceva, 2014).

2. Social Integration

Social integration is a process of building values, relations and institutions that ensure that all individuals, regardless of their race, ethnicity, sex, age, can fully participate in society on an equal basis. Older people are integrated into society in many different ways. They are part of social networks of friends and families; they are active in associations; work voluntarily or are employed. Older people, however, are also more threatened to not be fully integrated into society. This is mainly due to the fact that older people are more inclined to experience disability, such as problems with hearing or transportation. For the following analysis, we will define loneliness in congruence with Gerson and Perlman (1979) as a response to a discrepancy between actual and desired relationships (Gerson & Perlman, 1979). For the reasons mentioned above, age and loneliness are positively correlated. In an example, almost 40% of all British older adults' experience loneliness (Victor, Scambler, Bowling, & Bond, 2005). Human beings are social creatures, and hence, it is not surprising that loneliness has detrimental health effects (Appendix 1).



Appendix 1: Unstandardized regression representing the relationship between technology use, loneliness and subjective health from (Chopik, 2016)

According to the National Science & Technology Council of the United States of America there are six core capabilities that are essential for older people to maintain an independent live, and in which technology can be a positive factor (key activities of independent living; cognition; communication and social connectivity; personal mobility, transportation, access to healthcare). This paper will mainly focus on communication and social connectivity. Communication between

older members of society evolves around the physiological ability to communicate, the ability to understand one another and the technological ability to communicate. The technical ability to communicate is so important since social isolation and loneliness are linked to depressive symptoms. Loneliness is worse for health than obesity or inactivity.

While it is crucial in this domain to design products and services that address the need for social connectedness among older adults, the human-computer interaction will become increasingly important based on the demographic changes described above.

2.1. Human-Computer Interaction

Policymakers, business leaders, and non-governmental institutions already have recognized that an ageing population can be a powerful tool for economic growth. There is already a term - age-tech - that accurately describes the intersection of longevity and technology. The principle of age-tech is to design products and services that are valued by all groups but can be easily used by older people as well. One striking example is the recent acquisition of CTRL-Labs by Facebook. Facebook announced that it would pay between \$500 million and \$1 billion to acquire CTRL-Labs, a technology start-up from New-York City, that helps people control devices only using their thoughts (Murphy, 2019). The aim of all human-computer interaction activities is ultimately to develop interactive systems that are easy to use and offer task-appropriate functionality (usability) and, also, provide the user with an emotionally appealing user experience during use (user experience). Eventually, physically-disabled people will be able to use and leverage technology without being physically capable of doing so. While businesses have already identified the elderly population as a large, untapped market, the importance of enabling the elderly the use of technology as a means to facilitate social integration cannot be undermined.

In contrast to popular belief, older people even enjoy emailing and using social networks to communicate with their friends and loved ones. While mobile phones and other communication technologies offer the opportunity for social integration through communication today (Kubitsche, Stroetmann, Hüsing, & Stroetmann, 2002) collaborative robotics might be the next big thing of tomorrow. Devices and services that facilitate, and in some place, replace human contact are attracting attention to combat loneliness.

2.2. Artificial Intelligence

Artificial Intelligence (AI) will play an essential role in enabling the elderly to combat feelings of loneliness and social disintegration. AI enables machines to learn from experience, adapt to new incoming information, and accomplish tasks that require human-like thinking. Most common examples of AI today - from chess-playing computers to self-propelled cars - are mainly based on deep learning and natural language processing. With these technologies, computers can be trained for specific tasks by processing large amounts of data and recognizing patterns in that data. And computers can help combat loneliness. Two recent examples in this field underline the tremendous benefits of technology. At the beginning of 2019, Accenture Interactive launched an artificial intelligence solution that is working on the Google Voice Assistant. Memory Lane uses intelligence to capture stories from the elderly for future generations. Based on the correlation of the information provided by the user, Memory Lane can then ask questions and enable a real conversation. As an example, the 101-year old woman Ingegerd Brusewitz talks with Memory Lane about her choice of profession, and about growing up in the 1920s. Artificial intelligence is on the rise. For the past months, a small group of older adults in San Francisco has been learning to engage with a talking device, called ElliQ. ElliQ talks, but it also moves, lights up and leans towards the person it is interacting with. ElliQ uses verbal and non-verbal communication to engage with older persons regularly. By leveraging intuition robotics to overcome social exclusion, ElliQ helps the elderly to stay active.

Already today, shortages of personnel and high pressure in the care sector enforce the application of emotional robotics. It is no longer just a matter of performing tasks efficiently, but also of creating a pleasant interaction experience for people with robots and establishing a relationship of trust with the robot. Elli's Q and Accenture Interactive differ from real service robots in that they emulate behaviours during the execution of services that are oriented towards interpersonal communication. A socially interacting lifting aid, for example, would not only move a person but would also, for instance, compassionately ask whether the person is now lying comfortably.

2.3. Future Outlook

Already now, 76 per cent of interviewed German citizens believe that robots will play an essential role in the future not only in their role in industry but also in our personal everyday life as service robots. While there is already societal support for the usage of social robots, the implementation

will still take time. Given the unprecedented demographic change, with an increasing share of older people, in both developed and developing countries, social robots will help the elderly to stay connected with peers, interact, and substantially increase their well-being. For now, emotional robots do not act as a substitute for human interaction. Still, they can already take on essential parts of human behaviour that increase the well-being of the elderly. In the future, the focus will be put more and more on emotional robotics. Yet, the wide-spread implementation is hindered by various factors, among others, the lack of adaption by the robot. So far, robots can only perform very limited tasks. Even though technological advancement will solve that problem in the future, it is still uncertain to what costs these robots will be able to perform. Another topic of concern is data protection. As stated before, private companies are trying to enter this market as soon as possible. However, it is unclear, and right now, still very dangerous as to what happens with our personal data. Considering the technological advancement of the robot, more and more private information that will be shared. It is the government's responsibility to develop new rules and regulation that protect our data in a rapidly-changing environment.

3. Conclusion

The eminent demographic changes we face today imply both opportunity and risk. Opportunity because it is a largely untapped market that will be served with innovative products and services from the private sector. Risk because ageism is positively related to loneliness and detrimental health effects, and policymakers need to adapt to the rapid changing technologies (*Appendix 1*). In this paper, we have identified technology as a mean to combat loneliness. We have shown that businesses tackle this problem with solutions that interact with older people to engage with them and provide social companionship. While the high rates of support for technology and robots in specific, already underline the fact that technology can make longevity a sustainable achievement, it only goes along with changes in policies. The high initial costs of robots, as well as the uncertain regulatory environment, poses significant barriers to a wide-spread roll-out of robots. Last but not least, it is still unsure if emotional robots will be able to depict irrational behaviour similarly to human beings. Nevertheless, this question is beyond the scope of this paper.

Key References

- Bundesamt für Statistik.** (June 2019). *Bevölkerung*. Von Schweizerische Eidgenössenschaft. abgerufen
- Chopik, W.** (2016). The Benefits of Social Technology Use Among Older Adults Are Mediated by Reduced Loneliness. *Cyberpsychology, Behaviour and Social Networking*.
- Dann, T.** (2014). Global elderly care in crisis. *The Lancet*.
- Gerson, A., & Perlman, D.** (1979). Loneliness and expressive communication. *Journal of Abnormal Psychology*, 258-261.
- Jones, W.** (1981). Loneliness and social contact. *The Journal of Social Psychology*, 295-296.
- Kubitsche, L., Stroetmann, V., Hüsing, T., & Stroetmann, K.** (2002). *The Attitudes, Expectations and Needs of Elderly People in Relation to E-Health Applications: Results from a European Survey*. *Journal of Telemedicine and Telecare*.
- Max Planck Institut for Demographic Research.** (1998). Biodemographic trajectories of longevity. *American Association for the Advancement of Science*.
- Murphy, H.** (2019). *Facebook to spend \$1bn on brain-control start-up CTRL-Labs*. Los Angeles: Financial Times.
- United Nations.** (2015). *World Population Ageing 2015*.
- United Nations, D. o.** (2019). *Population Division. World Population Prospects 2019*.
- Victor, C., Scambler, S., Bowling, A., & Bond, J.** (2005). The prevalence of, and risk factors for, loneliness in later life: A survey of older people in Great Britain. *Ageing and Society*.
- Zaiceva, A.** (2014). The impact of age on the scale of migration. *I Z A World of Labour*.

The background of the entire page is a close-up, slightly blurred image of several US dollar bills. The bills are stacked and overlapping, with the focus on the intricate patterns and textures of the paper. The colors are primarily green and tan, with some blue and red accents from the security features. The text of the bills is partially visible but mostly obscured by the overlapping edges and the blur.

Geopolitics & Financial Markets

F. What can strategic planners learn from “political demography”? Take the book published by Jack Goldstone as a reference.

1. The Power of Political Demography
Submitted by Philippe Hachen

G. Analyze and discuss the interaction of population dynamics (migration, fertility, longevity, gender balance etc.) on social cohesion and equality.

1. The Effect of Population Dynamics on Social Cohesion and Equality
Submitted by Claudius Dreysse

The Power of Political Demography

Management Summary submitted by Philippe Hachen

Both, demography and political science, represent distinctive disciplinary universes which enjoy great exposure in scientific research. However, the power of their interrelation is less studied and widely neglected in the discourse of international relations. The concept of “Political demography” embraces this relationship and demonstrates how powerfully demographic variables are shaping political processes on a global and national level (Kaufmann & Duffy Toft, 2012, p.4). This paper’s purpose is to review Jack A. Goldstone’s publication “Political Demography – How Population Changes are reshaping International security and national politics” (c.f. Goldstone et al., 2012), derive implications for strategic leaders and apply the discussed topics on current case studies.

The Concept

The discussion of how population affects political systems is not a new one. One of the most influential theories is Robert Malthus “Malthusian Nightmare” (Goldstone, 2012, p.11). The economist wrote a popular and rather somber theory about the overall balance of the total population in regard to the total amount of resources available (Urdal, 2005, p.418). In contrast to Malthus, Goldstone shifts perspective from total ratios to a disaggregated level. Goldstone (2012, p.11) argues that not only the overall population, but the size and resource endowment of any subgroup have the potential to change the dynamics of a defined society. Hence, Goldstone (2012, p.11) resumes that political demography goes on “to study what changes in the distribution of resources and political power are likely to arise from changes in the absolute and relative sizes of various population subgroups.”

This highlights the topic’s relevance in the context of demography and political science. Demography acts as a first layer in determining size, distribution and shift of groups, while political demography represents a superior layer by analyzing the reaction of people and social institutions to changes in these variables (Goldstone, 2012, p.13). Therefore, Goldstone defines this paper’s topic as “[the] study of size, composition and distribution of population in relation to both government and politics” (2012, p.13). Figure 1 illustrates the concept by putting demographic variables at the centre. Disparities in these cause political dilemmas that affect various fields of political impact, captivated by the concept of

political demography that is eventually shaping national politics and international relations.

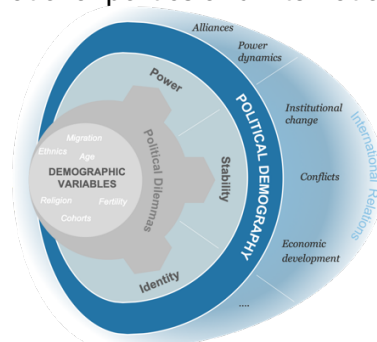


Figure 1: Visualization of Political Demography. Own Illustration

The concept’s application is diverse and can be observed on an international, national or subnational level. The author follows the frame of thought as presented in figure 2. On a global level, the author analyzes the relationship of demography and geopolitics and how it influences the power of nations. Becoming more granular, the age structure and its influence on political stability will be assessed on a national level. With these two notions in mind, the paper shifts focus on the global development and how demographic challenges of the developed and new world could be converted into a prosperous future.

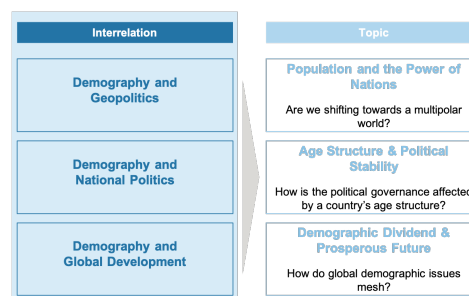


Figure 2: Frame of Thought. Own Illustration

Demography & Geopolitics

The relationship between the size of population and the power of a state is historically shaped under the perception that with more people and the linked economic development the higher the cultural and policy influence on a global scale (Howe & Jackson, 2012, p.37&44). This reasoning was as popular among ancient scholars (e.g. Polybius & Cicero; cf. Howe & Jackson, 2012, p.39), as it is today, given the fact that some political leaders put policies to reinforce or prevent their nationalist power position on their political agenda. Examples of these mediating policies include pronatalist tendencies through financial incentives in Russia (Rivkin-Fish, 2010) or the

radical form of political engineering, just recently observed among the Kurdish population in Syria (Gardner, 2019). In addition, one can observe how social, cultural but also religious norms shape demographic characteristics, as seen in Sub-Saharan countries where these contextual factors impede the indispensable decrease of fertility rates (Bakilana, 2016).

Policies serving the purpose of the mere exercise of power are highly controversial, however, the issue of a declining and aging population of developed countries needs to be urgently considered by their strategic leaders. The European, East Asian, and the American workforce will undergo a tremendous diminishing transition in the long run, while Africa's working population is going to explode by 2100, as seen in figure 3.

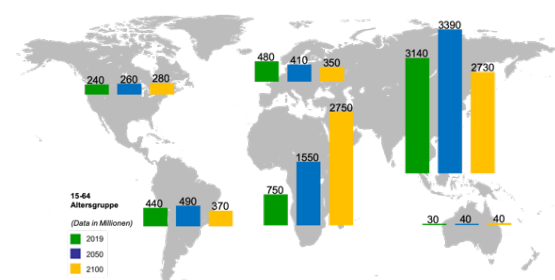


Figure 3: Population between 15-64 in mn. WDA Forum (2019, p.4)

The involved lack of innovation and struggling social welfare systems could result in an economical decline for developed countries and is reshaping the global value chain and power hierarchy irreversibly (Dabbs Sciubba, 2012, p. 65). Scholars state that by 2050 the combined GDP of Europe, US and Canada will double, while the world GDP will grow by the factor five (Goldstone, 2010, p.33), mainly driven by the powerhouses of China and India, but also by emerging countries such as Indonesia, Brazil, and Mexico (PWC, 2015, p.3). This development implies a shift towards a multicentric world, where the old and established nations' power is eroding, while new forces are emerging, therefore paving the way for new conflicts to arise (Kreft, 2013, p.14). This shift does not come overnight, however, appears to be an unstoppable process (Kreft, 2013, p.14). Consequently, there should be a call for action for developed nations to implement policies in order to ensure their capacity to act and remain influential on a global scale. In order to take respective countermeasures, the power transition theory proposes three dimensions that offer potential points of leverage as presented in figure 4 (Dabbs Sciubba, 2012, p.66). First, the absolute number of population size (i) can be leveraged by forming and fostering the integration

of political units, i.e. alliances like the EU or NATO, that bundle resources and promote comparative strengths. Furthermore, enlarged immigration can act as an effective lever. Next to the absolute labor strength, productivity (ii) represents a vital important variable of economic growth, notably by accumulating capital, efficiency and technological innovations. Third and last, the political capacity (iii), the state's ability to advance policy goals, needs to be strengthened in order to prevent age-based interest. (Dabbs Sciubba, 2012, p.68-70,74)

Power Dimension	Points for Leverage
i. Population Size	Political Units
	Immigration
	Fertility Rates
ii. Productivity	Capital
	Efficiency
	Technology
iii. Political Capacity	Policy Implementation
	Prevent age-based interest

Figure 4: Power Transition Theory, Dabbs Sciubba (2012, p.66)

Demography & National Politics

Demographic variables also play a crucial role on a national level, notably the relationship between political conflict and a country's age structure. Nations can be divided into four age-structural clusters: young, youthful, transitional, and mature states (Leahy Madsen, 2012, p.83). The first two clusters come with the propensity of a youth bulge, which in this paper, contrary to the common demographic definition, is defined as the disproportionate proportion of adults between 15 and 29 in the working-age population (age 15-64) (Cinotta & Doces, 2012, p.100). Depending on the underlying social structures, a youth bulge can become a factor of instability, as there is statistical evidence of a relationship between age-structure and conflict (Leahy Madsen, 2012, p.83). Research shows that younger age structures are prone to instability and conflict, therefore even affecting the government type of a country (Leahy Madsen, 2012, p.84). In fact, the political volatility and uncertainty associated with the presence of a youth bulge is a major impediment in attaining the status of a liberal democracy (Cinotta & Doces, 2012, p.114). The propensity of becoming a free democracy¹ in relation to its age-structure is presented in figure 5.

¹ As defined of Freedomhouse (2019)

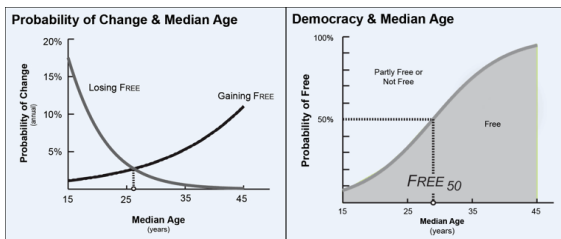


Figure 5: Age-Structural Maturity Thesis. Cinotta (2015)

A mature age structure is not a fully necessary condition for achieving a free and liberal regime. However, Cinotta's model (2015) shows that it is easier to achieve (gaining free) and easier to maintain (losing free) a free democracy with an increasing median age. In his later research, Cinotta (2017) defined a median age of 28,9 years as the "Free50", the 50% probability of attaining a liberal democracy. Adapting Cinotta's model to the real world, Tunisia with its median age of 31,6 has a high probability of keeping its status as a free democracy that it has achieved after Ben Ali's fall (Cinotta, 2015). Though, one has to be careful how to use the model. It should not be used as a visceral prediction tool and extended by a qualitative assessment, as like all models, it is based on past data and, therefore, sensitive to things yet to come (Cinotta & Doces, 2012, p.115). Nonetheless, the model can help to better understand the historic and current global trends in political liberalization.

Demography & Global Development

As discussed in the previous section, the relationship between violence and the youth bulge also depends on the underlying social structures. A pronounced youth bulge implies a large supply of individuals with low opportunity costs. Contextual factors influencing a youth bulge's course are economic development, education, and the degree of urbanization. Especially countries with low development, a semi-democratic regime, and a large absolute size of population are most prone to experience higher levels of conflict emerging from its youth bulge dynamics. (Urdal, 2012, p.120-123)

Nonetheless, youth bulges can also act as a driver of a country's development when capturing the demographic dividend. The demographic dividend implies an economic development through variations in the dependency ratio, i.e. the share of non-working age population to working population (Lin, 2012). Decreasing the dependency burden is positively associated with economic growth, which has been observed in the ascent of Asia's Tiger states (Urdal, 2012, p.121). A fair share of developing countries is within or at the verge of this demographic transition that enables the opportunity of achieving the demographic dividend. Taking advantage of this dividend will

weaken the effect of a youth bulge on political violence, ultimately transforming into a peace dividend (Urdal, 2012, p.128). In order to achieve so, respective policies that create opportunities for young people need to be applied, notably by fostering quality education, health, lower fertility rates, and decent employment (UNFPA, 2016).

The challenges mentioned above do show how intertwined and ambiguous our global demographic issues are. On the one hand, there are overaged developed countries with a decreasing workforce, on the other hand developing countries that need to address their youth bulge as a central challenge. Therefore, the question arises on how one can fix the dilemma of both sides and thereby leading the world into a more prosperous future.

Goldstone proposes to adapt our view on the world to a new three-world order based on the countries' demographic maturity, with the first-world being aging and industrialized nations, the second world being states that are fast-growing, economic dynamic and balanced in age, and a third world of fast growing and very young countries. The first and second world need to build efficient partnerships and actively approach the third world by supporting and investing in better governance. He therefore sees the inevitable adaptation of established institutions (e.g. NATO or G7) by integrating the widely underrepresented second world, as their global role in the 21st century's economic and security questions becomes more and more crucial. (Goldstone, 2010, p.38-39)

Furthermore, an effectively managed migration can act as a development vehicle for both, developed and developing nations. Ageing states can bring back dynamism into their workforce, which is tied to the Power Transition Theory. For young and fragile states emigration can act as a safety valve to absorb disproportionate youth bulges. Goldstone (2019) openly expresses that young labor, for example from Africa, should be recognized as a valuable and untapped resource by developed countries. With the respective training of this labor forces, a corresponding return migration could create a positive cycle in the long run which could further improve the development perspectives of African countries (Goldstone, 2019).

Conclusion

The concepts and examples presented do show how important an integrative view on demography and political science has become. Today's demographic challenges are becoming increasingly interlinked and would require goals that mesh and collective power in their execution

(Dabbs Sciubba, 2012, p.77). However, one can observe the opposite: “most countries are currently enacting policies that ignore or actually run counter to what they need in terms of demographic trends” (Goldstone, Interview, 29 October 2019). Strategic planners should acknowledge, that changes in demographic variables are powerful forces and political demography is trying to decode and integrate them into the big picture – or in the words of Jack Goldstone: “we need to understand how these forces operate, if we are to take control of our destiny and shape it” (2012, p.276).

Key References

- Bakilana, A. (2016).** *Why are fertility rates so high in Sub-Saharan Africa?* Retrieved from: <https://www.weforum.org/agenda/2016/05/why-are-fertility-rates-so-high-in-sub-saharan-africa>
- Cinotta, R., & Doces, J. (2012).** The Age-Structural Maturity Thesis. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (98-116). New York, NY: Oxford University Press.
- Cincotta, R. (2015).** Will Tunisia's Democracy Survive? A View from Political Demography. 10.13140/RG.2.1.4660.1127.
- Cincotta, R. (2017).** 8 Rules of Political Demography That Help Forecast Tomorrow's World. 10.13140/RG.2.2.22582.70721.
- Dabbs Sciubba, J. (2012).** A New Framework for Aging and Security. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (63-77). New York, NY: Oxford University Press.
- Gardner, D. (2019, October 2).** *Syria is witnessing a violent demographic re-engineering.* Financial Times, Retrieved from <https://www.ft.com/content/e40cb754-e456-11e9-b112-9624ec9edc59>
- Goldstone, J. (2010).** The New Population Bomb. *Foreign Affairs*. 89. 31-43. 10.2307/20699781.
- Goldstone, J., Kaufmann, E., & Duffy Toft, M. (Eds.). (2012).** *Political Demography. How Population Changes are reshaping international security and national politics.* New York, NY: Oxford University Press.
- Goldstone, J. (2012).** A Theory of Political Demography. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (11-28). New York, NY: Oxford University Press.
- Goldstone, J. (2019).** *Africa 2050: Demographic Truth and Consequences.* Retrieved from <https://www.hoover.org/research/africa-2050-demographic-truth-and-consequences>
- Howe, N., & Jackson, R. (2012).** Demography and Geopolitics. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (31-48). New York, NY: Oxford University Press.
- Kaufmann, E., & Duffy Toft, M. (2012).** Introduction. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (3-9). New York, NY: Oxford University Press.
- Kreft, H. (2013).** *Deutschland, Europa und der Aufstieg der neuen Gestaltungsmächte / Heinrich Kreft.* Retrieved from <https://search.ebsco-host.com/login.aspx?direct=true&db=edswao&AN=edswao.407154760&lang=de&site=eds-live>
- Leahy Madsen, E. (2012).** Age Structure and Development through a policy lens. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (81-97). New York, NY: Oxford University Press.
- Lin, J. (2012).** *Youth Bulge: A Demographic Dividend or a Bomb?* Retrieved from <http://blogs.worldbank.org/developmenttalk/youth-bulge-a-demographic->

dividend-or-a-demographic-bomb-in-developing-countries

- PWC. (2015).** *The world in 2050*. Retrieved from: <https://www.pwc.com/gx/en/issues/the-economy/assets/world-in-2050-february-2015.pdf>
- Rivkin-Fish, M. (2010).** Pronatalism, Gender Politics, and the Renewal of Family Support in Russia: Toward a Feminist Anthropology of "Maternity Capital". *Slavic Review*, 69(3), 701-724. Retrieved from <http://www.jstor.org/stable/25746278>
- UNFPA. (2016).** *Demographic Dividend*. Retrieved from <https://www.unfpa.org/demographic-dividend>
- Urdal, H. (2005).** People vs. Malthus: Population Pressure, Environmental Degradation, and Armed Conflict Revisited. *Journal of Peace Research*, 42(4), 417-434. Retrieved from <http://www.jstor.org/stable/30042334>
- Urdal, H. (2012).** Youth Bulges and Violence. In J. Goldstone, E. Kaufmann & M. Duffy Toft (Eds.), *Political Demography. How Population Changes are reshaping international security and national politics* (117-132). New York, NY: Oxford University Press.
- WDA Forum. (2019).** *Die Demographie des 21. Jahrhunderts* [Powerpoint Presentation].

The Effect of Population Dynamics on Social Cohesion and Equality

Management Summary submitted by Claudius Dreyses

Introduction

This management summary will provide an abstract on the major population dynamics and their impact on social cohesion and equality. Three major factors are identified that govern our world's demographic change, which are fertility, longevity and migration (Bloom & Luca, 2016, p. 14 ff.). This analysis looks at three countries from three different continents and compares how their fertility, longevity and migration developed over time and what implications this holds with respect to social cohesion and equality in those countries.

Population Dynamics

Growth: Today, 7.7 billion people populate the earth. By 2050 the global population is expected to increase by 26% to 9.7 billion. Based on medium variant estimations by the United Nations, the earth's population is expected to peak at 11 billion around the next turn of the century in 2100 (United Nations, 2019). Population growth will vary across regions and continents (see Fig. 1).

The strongest growth will be seen in Sub-Saharan Africa, where the population is expected to double by 2050 (United Nations, 2019). Population in Northern Africa and Western Asia will grow by 46%, Central and Southern Asia by 25% and Latin America by 18%. Europe and Northern America are projected to experience the slowest growth at a level of 2% (United Nations, 2019).

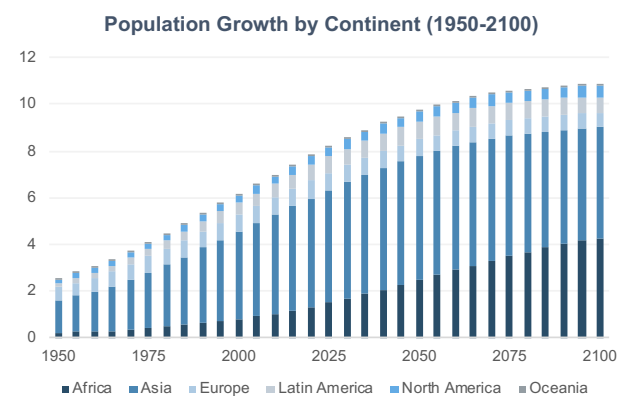


Figure 1: Population Growth by Continent (1950-2100)

Nine countries alone will make up more than half of the global population growth between now and 2050. These are majorly India, Nigeria, Pakistan, Congo, Ethiopia, Tanzania, Indonesia, Egypt and the USA (United Nations, 2019).

When observing the historical and projected population growth of the different continents indexed

to their 1950 population, it becomes apparent just how far the population growth in Africa exceeds those on all other continents (Fig. 2).

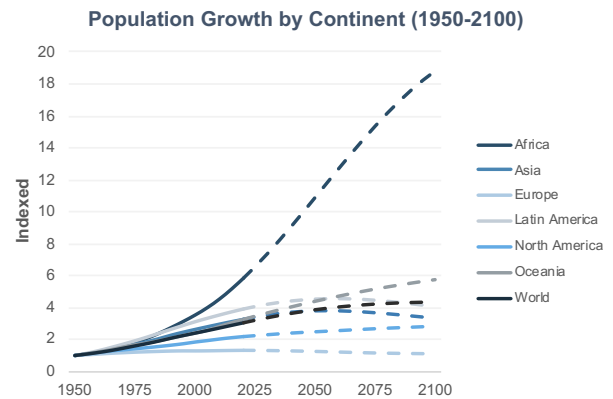


Figure 2: Indexed Population Growth by Continent (1950-2100)

There are two major factors that contribute to population growth. One is the high – but decreasing – fertility level, the other is the increasing longevity of the global population.

Fertility: Population growth is highlighted by the high fertility rate that can be observed in the African continent (Fig. 3). While today's global average fertility rate is at around 2.5 births per woman (including Africa), Africa alone reproduces at a rate of about 4.5. By 2050 the global fertility rate is projected to decline to 2.2 and is expected to converge to just below 2 by the end of the century with most regions assimilating in their rate of reproduction. To remain at a constant level of population, fertility rates need to be at 2.1 (United Nations, 2019).

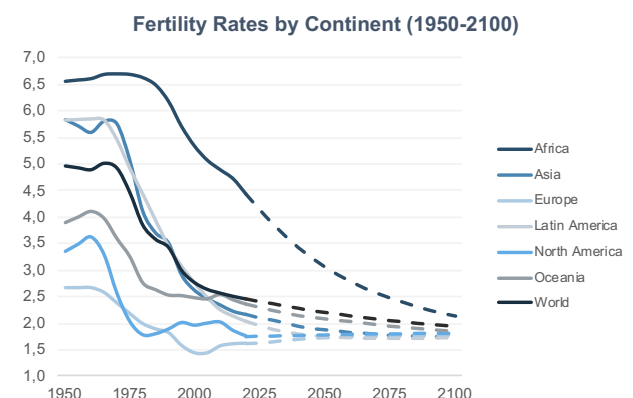


Figure 3: Fertility Rates by Continent (1950-2100)

Longevity: On a global level, life expectancy has sharply increased in the past. While the global life expectancy was at 64.2 years in 1990 it is at 72.6 years today. This trend will continue in the 21st century reaching a projected life expectancy

of 77.1 in 2050 (Fig. 4). This is largely due to better healthcare, better nutrition and increasing widespread access to clean water, as well as improvements in living conditions (United Nations, 2019).

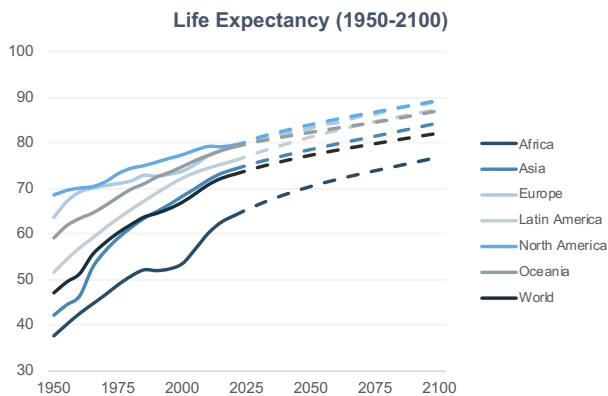


Figure 4: Life Expectancy (1950-2100)

There is, however, an imbalance in life expectancy that can be observed between different continents. Yet, when looking at the change in life expectancy, it has to be noted that while Africa today is still the continent with the lowest life expectancy, it is also the region that experiences the largest improvement in longevity (Fig. 5). By 2100 the life expectancy in Africa is expected to have doubled from its 1950 level, which was at 37.5 years. Despite global improvements, life expectancy in the least developed countries is at 7.4 years below the global average. The major contributing factors for this are high child and maternal mortality, but also violent conflicts and epidemics such as HIV.

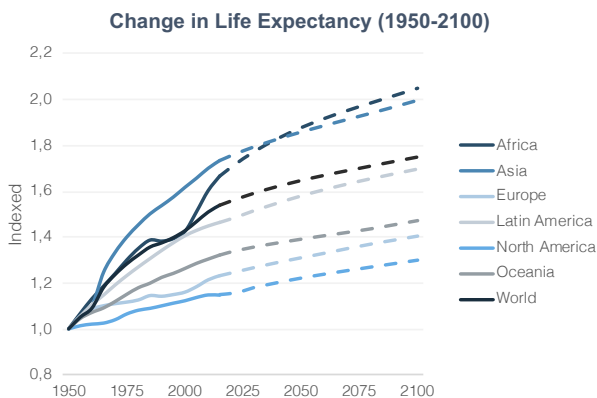


Figure 5: Change in Life Expectancy (1950-2100)

The higher life expectancy – together with lower fertility rates in the future – will lead to an aging of our population. By 2050 the global share of people above the age of 65 will have doubled with respect to today's level (United Nations, 2019). This clearly shows in the development of global median age, as depicted in figure 6. From

now to 2050, the median population age is projected to increase by 37.6%.

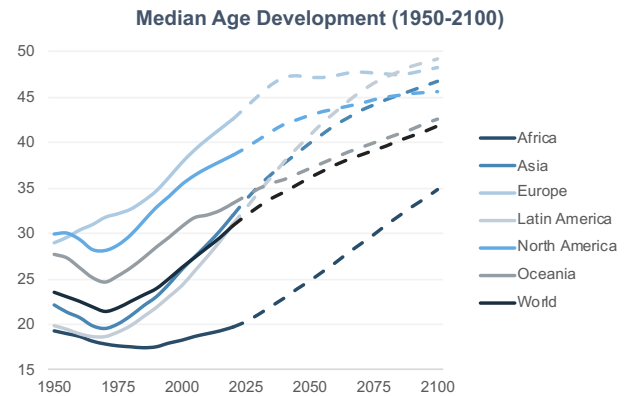


Figure 6: Median Age Development (1950-2100)

Migration: Migration is another factor in population dynamics that holds big implications for social cohesion and equality. There are a number of factors that drive migration across the globe. One major reason is the global demand for migrant workers that causes a net emigration especially from South-East-Asian countries. Secondly, violence and insecurity lead to net emigration from countries like Myanmar, Syria or Venezuela. As a result, many European countries have experienced large inflows of immigrants and will continue to do so in the future (United Nations, 2019).

As depicted in the chart in figure 7, Europe and North America have historically been the countries with the largest net immigration, which is projected to remain at a constant high level over the next 80 years and helps to offset domestic population losses.

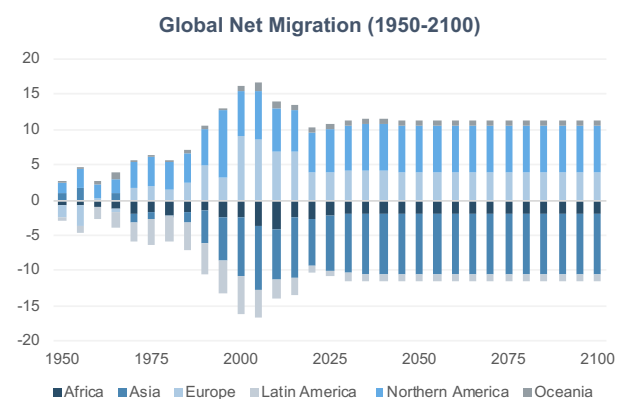


Figure 7: Global Net Migration (1950-2100)

Social Cohesion and Equality

These demographic changes bring along a number of challenges. There are also implications for social cohesion and equality within and across nations. Especially the poorest countries, where population growth is the highest, will find it hard

to meet the sustainable development goals of eradicating poverty, reaching greater equality, fighting malnutrition and improving health and educational systems.

When analysing equality, one has to first define (in)equality and decide in which terms it should be measured. Possible metrics are wealth, income, living standard, but also education, health and opportunity can be looked at. The level of equality will always depend on the metrics that are applied.

One of the most recognised measure of equality is the Gini Index. It measures the degree of inequality in terms of the distribution of family income in a given country. The more equal the income distribution, the lower the Gini Index. If there was perfect equality in income the Index would take the value of zero.

While the Gini Index only considers people's income to classify the equality of people, there are other measures such as the Human Development Index (HDI) that also takes life expectancy, education and gross national income per capita into account. Here, values range from 0 to 1 with 1 being the highest possible score.

As mentioned in the introduction, the analysis focuses on three different countries to evaluate the effect of population dynamics on social cohesion and equality, namely Germany, China and Ethiopia. These countries were chosen on the basis of their geography, their stage in development and different future prospects. As representative countries of their continents, they help to draw comparisons between different regions in the world.

On the Gini Index, Germany ranks 144th (rank 1 being the least equal) with an index value of 27, followed by Ethiopia, ranked 133rd with a value of 33 and China, ranked 29th with an index of 46.5 (CIA, 2019). In the Human Development Index, Germany ranks 5th at 0.94, followed by China in 86th place with 0.75 and Ethiopia, ranked 173rd at 0.46 (UNDP, 2017).

It shows that while Ethiopia might have a more equal distribution of income than China, they are far less developed and thus rank much lower in the HDI (Fig. 8). The question becomes how the apparent differences in equality of income but also in the degree of education and life expectancy are going to be affected by future population dynamics and vice versa.

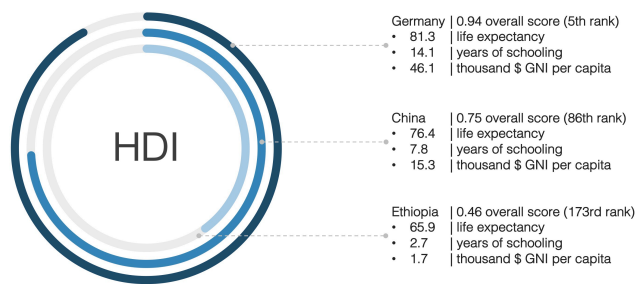


Figure 8: HDI in Germany, China and Ethiopia

Longevity alone will present a number of challenges. Firstly, there will be a change in countries' workforce structure, as the share of retired people will increase compared to the proportion of the active workforce. This will lead to larger economic dependencies between generations (European Commission, 2015, p. 59 ff.). By 2050 most of the developed countries will have potential support ratios of below two, which describes the ratio of working age people (aged 25-64 years) to those over the age of 65. This will pose a particular challenge to the maintenance of public systems such as pensions, social protection and healthcare. Public systems will rely on a strong labour market and will have to be financed through sharper fiscal policies, i.e. higher tax rates (United Nations, 2019). As a consequence, this might lead to social tensions rather than social cohesion and give a younger generation reason to challenge the status quo as the idea of an intergenerational contract loses its plausibility.

While this especially holds true for the stagnant and ageing countries like Germany and China – where by 2050 a quarter of the population will be above 65 –, countries like Ethiopia that still experience high fertility rates may profit from a growing population at working age if they manage to capture the consequent economic potential (United Nations, 2019). However, investments in education and healthcare are essential to sustain economic growth.

Furthermore, longevity itself is a matter of inequality. As mentioned earlier, higher life expectancy is largely due to better healthcare and nutrition. However, with healthcare being costly to the individual and unequally distributed across the globe, populations with lower earnings (growth) will lag in access to medical technology, effectively decreasing their life expectancy. Thus, the level of income is a strong contributing factor to the emergence of a longevity gap (Frankovic & Kuhn, 2019). This also raises the question in which condition the ever more ageing population will live and whether a longer life will even equate to a healthy life. There is the argument, that health deficits typically experienced by a certain age group will in the

future come into effect at a later age and will thus follow the shift to a higher life expectancy (Abeliansky & Strulik, 2019). However, people of low socio-economic status will see their health decline at the same rate as before, leading to a long-run inequality of health.

Conclusion

The world population prospects, as published by the United Nations, paint the picture of a world that will experience a stagnation in population growth over the course of the century, following an era of explosive growth. As a consequence, the age structure of the world – especially of the western world – is shifting older and creates a (mostly financial) burden that younger generations will have to bear. This may cause unprecedented social tensions and political turmoil.

Already today, there is a debate on how the new generation will manage to provide for an ever growing older generation. As governments are struggling for solutions, people have to also rethink their concept of life on an individual level.

Furthermore, it is unclear if a longer average life will equate to a healthy life for all equally. Thus there is rising concern that a higher long-run inequality of health is taking root in society.

Overall, higher longevity, decreasing global fertility and migration pose challenges to the world and society that have to be acted upon to capture their potential for growth and sustainable development on the one hand, but also to prevent the emergence of major imbalances within and across nations.

Key References

Abeliansky, A., & Strulik, H. (2019). Long-run improvements in human health: Steady but unequal. *The Journal of the Economics of Ageing*.

Bloom, D. E., & Luca, D. L. (2016). *The Global Demography of Aging: Facts, Explanations, Future*. Bonn: Forschungsinstitut zur Zukunft der Arbeit Institute for the Study of Labor.

CIA. (2019). *Country Comparison: Distribution of Family Income - Gini Index*. Retrieved from CIA World Fact Book: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2172rank.html>

European Commission. (2015). *The 2015 Ageing Report*. Brussels: European Commission.

Frankovic, I., & Kuhn, M. (2019). Access to health care, medical progress and the emergence of the longevity gap: A general equilibrium analysis. *Journal of the Economics of Ageing*.

UNDP. (2017). *Human Development Index*. Retrieved from United Nations Development Programme: Human Development Reports: <http://hdr.undp.org/en/composite/HDI>

United Nations. (2019, June 17). *Growing at a slower pace, world population is expected to reach 9.7 billion in 2050 and could peak at nearly 11 billion around 2100*. Retrieved from United Nations: Department of Economic and Social Affairs : <https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html>

United Nations. (2019, August 28). *World Population Prospects 2019*. Retrieved from United Nations: DESA/Population Division: <https://population.un.org/wpp/DataQuery/>

United Nations. (2019, June). *World Population Prospects 2019: Highlights*. Retrieved from https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf

III. NEW BOOK PUBLISHED BY THE LECTURER

Failure is not an Option - How Africa can capture its Demographic Dividend, and why is this so important?

On June 21, 2017, Hans Groth from the World Demographic & Ageing Forum in St. Gallen, Switzerland, and John F. May from the Population Reference Bureau in Washington, D.C., USA, have published their book named "Africa's Population: In Search of a Demographic Dividend". The book analyzes how Africa can accelerate its economic growth by benefitting from its changing population structure. It includes contributions from renowned African and international scholars and is expected to become a reference work for international opinion leaders, policymakers, and strategic planners.

There is no doubt: Africa will dominate global population dynamics in the 21st century. While public attention is still focused on Asia as a fast-growing and prospering market with currently 4.5 billion inhabitants, today's one billion sub-Saharan Africans have significantly outpaced Asia in terms of population growth (2.6% vs. 1.1% in 2016, respectively).

The main reason for this ongoing population growth in sub-Saharan Africa (SSA) is a sharp decline in infant and child mortality while birth rates have been high for years (the fertility rate per woman was 5.1 in 2013 compared to 6.7 in 1970), while infant mortality declined rapidly from 138 deaths per thousand births in 1970 to 67 in 2013. Today, one billion people or 16% of the world population live in SSA. By 2050, they will double and in 2100, 3.9 billion people or 39% of the world population could live in the region. This is the official forecast according to the Medium variant of the 2015 United Nations Population Projections.

A key issue today is the formulation of policies that would help Africa to replicate the conditions that have enabled East Asian countries to prosper and capture a "demographic dividend" (DD) during the period covering the early 1960s to the 1990s. The DD is defined as an accelerated economic growth triggered by the decline in a country's birth and death rates and the relative increase in working-age adults. However, to open this demographic window of opportunity, public policies will need to manage a rapid and significant decline in fertility in order to reduce the number of young dependents.

With the objective of enhancing the much-needed discussion on the demographic dividend in Africa, Dr. Hans Groth of the *World Demographic & Ageing Forum* (WDA Forum), a Switzerland-based think-tank has joined forces with John F. May from the *Population Reference Bureau* (PRB) in Washington, D.C., a world leader in demographic data packaging and dissemination. The outcome of this collaboration is a comprehensive book named "Africa's Population: In Search of a Demographic Dividend", which is based on up-to-date research on Africa's population dynamics. Fifty renowned scholars, many of them African – have contributed to this book, which has been published on June 21, 2017.

The book's key conclusions are:

- **Africans urgently need jobs.** There will be no demographic dividend without new jobs. According to the International Monetary Fund (IMF), 18 million new jobs are needed every year till 2050. For just one year, this is equivalent to the population of the Netherlands. From now until 2050, the new jobs required are almost equivalent to the entire European population. The prerequisites to achieve this are education and training, followed by investment based on trustworthy conditions.
- **Africa needs continued health investment and improvement.** The window of opportunity for a demographic dividend only appears when fertility declines significantly and rapidly. This depends on further improvements of women's and children's rights and health outcomes. Making sure that women meet their reproductive health needs is a key priority.
- **Failure is not an option. A bad outcome would challenge both Africa and the global community.** Not succeeding in capturing a demographic dividend in Africa would lead to millions of people living in poverty and in slums. It would result in a restless young population and facilitate human suffering and social disruptions that could spill over well beyond Africa.

"Africa's Population: In Search of a Demographic Dividend" is expected to become an internationally recognized reference work for leaders, scholars, policymakers, and business planners.

John May is visiting scholar at the Population Reference Bureau, Washington DC.

Hans Groth is chairman of the board at the World Demographic & Ageing Forum, St Gallen. They recently published the book 'Africa's Population: In Search of a Demographic Dividend' (Springer, 2017)

Reference of the Book

Hans Groth & John F. May "Africa's Population: In Search of a Demographic Dividend", Dordrecht: Springer Publishers, 2017 (ISBN 978-3-319-46887-7). See also: <http://www.springer.com/us/book/9783319468877>

IV. CONTACT DETAILS

Lecturer

Dr. Groth, Hans | hgroth@wdaforum.org | CH/DE
Chairman of the World Demographic & Ageing Forum (WDA Forum)

Contributors

Bayer, Isabel | isabel.bayer@student.unisg.ch
M.A. Business Innovation (MBI), CEMS

Binggeli, Lucas | lucas.binggeli@student.unisg.ch
M.A. Business Innovation (MBI), CEMS

De Arruda, Luiz | luiz.dearruda@student.unisg.ch
M.A. Banking and Finance (MBF)

Dreyse, Claudius | claudius.dreyse@student.unisg.ch
M.A. Banking and Finance (MBF)

Feng, Ziqian | ziqian.feng@student.unisg.ch
M.A. International Affairs (MIA)

Frei, Simon | simon.frei@student.unisg.ch
M.A. Banking and Finance (MBF), CEMS

Friedli, Patrick | patrick.friedli2@student.unisg.ch
M.A. Accounting and Finance (MAccFin)

Hachen, Philippe | philippe.hachen@student.unisg.ch
M.A. Business Management (MUG)

Kick, Annette | annette.kick@student.unisg.ch
M.A. Banking and Finance (MBF), CEMS

Kilchenmann, Oliver | oliver.kilchenmann@student.unisg.ch
M.A. Banking and Finance (MBF)

Kölbl, Anna-Katharina | anna-katharina.koelbl@student.unisg.ch
Exchange Student, CEMS

Lamm, Konstantin | konstantin.lamm@student.unisg.ch
M.A. Banking and Finance (MBF)

Leugger, Sandro | sandro.leugger@student.unisg.ch
M.A. Business Innovation (MBI)

Marburger, Leon | leon.marburger@student.unisg.ch
M.A. Accounting and Finance (MAccFin)

Seiler Andreas | andreas.seiler@student.unisg.ch
M.A. Accounting and Finance (MAccFin)

Wurster, Kai | kai.wurster@student.unisg.ch
M.A. Business Innovation (MBI), CEMS

Hans Groth · John F. May Editors

Africa's Population: In Search of a Demographic Dividend

This book examines the promises as well as the challenges the demographic dividend brings to sub-Saharan Africa as fertility rates in the region fall and the labor force grows. It offers a detailed analysis of what conditions must be met in order for the region to take full economic advantage of ongoing population dynamics. As the book makes clear, the region will need to accelerate reforms to cope with its demographic transition, in particular the decline of fertility. The continent will need to foster human capital formation through renewed efforts in the areas of education, health, and employment. This will entail a true vision and determination on the part of African leaders and their development partners. The book will help readers to gain solid knowledge of the demographic trends and provide insights into socioeconomic policies that eventually might lead sub-Saharan Africa into a successful future.

« Africa needs a serious dialogue on population, the demographic transition, and the demographic dividend. This book with its comprehensive approach to the subject, makes an invaluable contribution. A must read for policymakers and development practitioners. »

Ngazi Okonjo-Iweala, former Finance Minister of Nigeria and former Managing Director of the World Bank Group.

« Everyone concerned about human welfare in sub-Saharan Africa should know about the demographic dividend, what it is, what causes it, and how to strengthen it. This volume provides an excellent summary of these crucial issues. The sooner policymakers pay attention and take the proper actions, the better. »

John Bongaarts, Vice President of the Population Council

« There is no more important socioeconomic issue for this century than that of whether Africa's currently rapid population growth turns out to be a dividend or a curse. As a comprehensive, up-to-date guide to the potential and the challenges, this book deserves to be widely read and debated. »

Bill Emmott, former Editor-in-Chief of The Economist, Chairman of the Wake Up Foundation

« This book is of utmost strategic relevance for any globally active company. For Africa in particular, the role of demographic change and the potential economic opportunities are all too often disregarded. »

Reto Francioni, Chairman SWISS International Airlines, former CEO Deutsche Börse

Social Sciences



► springer.com

Groth · May Eds.



Africa's Population: In Search of a Demographic Dividend

Hans Groth · John F. May Editors

Africa's Population: In Search of a Demographic Dividend

 Springer