



ANEXX GUIDE

Group of Twenty



ARGENTINE REPUBLIC

Argentina is located in South America, being the world's eighth largest country¹ and the first of the subcontinent to host a G20 summit. Moreover, Argentina is one of just three Latin American countries in the organization, including Mexico and Brazil².

Argentina possesses a large and literate workforce. However, a sizable number of Argentine workers were unemployed at the turn of the 21st century. Strong labor laws were enacted during the Perón era, when unions wielded great power over the Argentine economy, but successive governments have attempted to reform or repeal some of the Peronist strictures³.

During the last 20 years, the labor force in the country has moved from developing more in the area of intensive manual tasks, instead of performing the cognitive's ones⁴. In light of that, this challenge is well-known in many other nations of Latin America and the developing world, however, for Argentina, the problem was compounded by a severe financial crisis in 2001-2003⁵

Since the late 1980's, the country has faced economic adversities. Yet, the start-up scene continues to grow, with a new generation of companies on the move⁶. Thereby, the country has long had a sophisticated and accomplished science culture; it has had three Nobel laureates, more than any other Latin American nation⁷.

Argentina has a strong tradition of science and technology. Thus, its research centers and researchers enjoy international recognition and its firms export high technology products to the world's most demanding markets. The public sector's support for research and

¹ BRITANNICA. **Argentina**. Available at: <<https://www.britannica.com/place/Argentina>>. Access on: May 04, 2018.

² THE NEXT WEB. **Argentina: A look into Latin America's most global tech hub**. Available at: <<https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>>. Access on: May 04, 2018.

³ BRITANNICA. **Argentina**. Available at: <<https://www.britannica.com/place/Argentina>>. Access on: May 10, 2018.

⁴ WORLD BANK. **Technological Change and the Labor Market in Argentina and Uruguay**. Available at: <<http://documents.worldbank.org/curated/en/171901507816912979/pdf/WPS8215.pdf>>. Access on: May 10, 2018.

⁵ THE WORLD ACADEMY OF SCIENCES. **Argentina: A Nation for Innovation**. Available at: <<https://twas.org/article/argentina-nation-innovation>>. Access on: May 10 2018.

⁶ THE NEXT WEB. **Argentina: A look into Latin America's most global tech hub**. Available at: <<https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>>. Access on: May 04, 2018. <<https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>>. Access on: May 04, 2018.

⁷ THE WORLD ACADEMY OF SCIENCES. **Argentina: A Nation for Innovation**. Available at: <<https://twas.org/article/argentina-nation-innovation>>. Access on: May 04, 2018.

development has intensified in the 21st century. With the creation of the Ministry of Science, Technology and Productive Innovation (MINCYT), the status of science, technology, and innovation (CTI) rose to the level of state policy⁸.

In summary, during the last two decades, the workplace in Argentina has experienced some changes in terms of the type of tasks that workers perform in their jobs. In this sense, we can detect an increase in the relative importance of non-routine cognitive tasks and a reduction in the intensity of manual tasks⁹.

From 1999 to 2017, progress has been a hard road for Argentina, nonetheless, the country's start-up ecosystem is truly starting to flourish¹⁰. Therefore, it is essential that the Argentine G20 plan of action includes policies that increase protection for workers in this new economy. A first step will be to create an agenda that prioritizes labor rights and protection¹¹.

CANADA

Canada is a country that occupies a large part of North America and is represented by a population of about 35 million people. While it is the second country in territorial extension, it is one of the richest in the world, occupying the 14th place in the list of the biggest global economies. Their major trading partners are United States, Japan, United Kingdom, China and Mexico¹².

In what concerns Canada's participation at the G20, it is important to point that Canada is one of the members that, like Germany, USA, France, Italy, Japan and Russia, belonged to G7, the originator of G20 in 1999. Thus, since then, Canada has been an active country, participating regularly in conferences.

⁸ IDB IMPROVING LIVES. **The IDB and technological innovation in Argentina**. Available at: <<https://www.iadb.org/en/news/webstories/2011-05-27/the-idb-and-technological-innovation-in-argentina%2C9393.html>>. Access on: May 04, 2018.

⁹ WORLD BANK. **Technological Change and the Labor Market in Argentina and Uruguay**. Available at: <<http://documents.worldbank.org/curated/en/171901507816912979/pdf/WPS8215.pdf>>. Access on: May 04, 2018.

¹⁰ THE NEXT WEB. **Argentina: A look into Latin America's most global tech hub**. Available at: <<https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>>. Access on: May 04, 2018

¹¹ COUNCIL OF COUNCILS. **Taking on Technology in Argentina's G20 Presidency**. Available at: <https://www.cfr.org/councilofcouncils/global_memos/p39170>. Access on: May 10, 2018.

¹² WIKIPEDIA. **List of the largest trading partners of Canada**. Available at: <https://en.wikipedia.org/wiki/List_of_the_largest_trading_partners_of_Canada>; accessed in May 16, 2018.

Firstly, about technology, Canada is one of the 20 countries with most developed technology, according with the Global Innovation Index ranking¹³. It is correct to note that the technology sector in Canada is a main economic driver, since it is responsible for 7.1% of its GDP, which corresponds to 117 billion dollars¹⁴.

Henceforward, when the subject is unemployment, Canada's rate has decreased from 2017 to nowadays, despite the growth in the technology field which contradicts the theses that technology contributes to the end of jobs. Furthermore, according with the latest data released, the unemployment takes almost 5.8% of Canadian population, a number that has been stable in the year of 2018¹⁵.

Nonetheless, for Canada, these technological movements can be seen as “main driver of growth and productivity”, although, it will also transform the way Canadians work. The Canadian Government already said: “Canada gives priority to ensuring that our citizens can adapt to, and benefit from technological change by focusing on skills, education, strengthening social safety nets and ensuring decent work, with particular emphasis on gender.”¹⁶

COMMONWEALTH OF AUSTRALIA

Located in Oceania, the Commonwealth of Australia is the world's sixth-largest country¹⁷. In 2017, it had a population of 24,450,561 people¹⁸ and a GDP per capita of approximately 49,113 American dollars¹⁹. Although Australia's economy is varied, the

¹³ THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development**. Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

¹⁴ MENTAL WORKERS. **Technology Industry is Canada's Fastest Growing Economic Sector**. Available at: <https://www.mentorworks.ca/blog/market-trends/canadian-technology-industry/>. Accessed in May 16, 2018.

¹⁵ TRADING ECONOMICS. **Canada Unemployment Rate**. Available at: <https://tradingeconomics.com/canada/unemployment-rate>. Accessed in May 16, 2018.

¹⁶ CANADA. **Canada at the G20**. Available at: http://www.international.gc.ca/world-monde/international_relations-relations_internationales/g20/index.aspx?lang=eng#future. Accessed in May 19, 2018.

¹⁷ AUSTRALIAN GOVERNMENT. **Area of Australia: states and territories**. [20--]. Available at: <http://www.ga.gov.au/scientific-topics/national-location-information/dimensions/area-of-australia-states-and-territories>. Accessed 14 may 2018.

¹⁸ WORLD POPULATION REVIEW. **Australia population 2018**. 2018. Available at: <http://worldpopulationreview.com/countries/australia-population/>. Accessed 14 may 2018.

¹⁹ ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **Selected indicators for Australia**. Available at: <https://data.oecd.org/australia.htm>. Accessed 14 may 2018.

service sector has great prominence, since it accounts for four out of five jobs²⁰. It is important to mention that, inasmuch as its economy is extremely open and its laws are business-friendly²¹, Australia is currently a very attractive destination for private investment²².

The Heads of Government of Australia have taken part in the G20 Leaders' Summit since 2008. Indeed, Kevin Rudd, who served as Prime Minister at that time, helped gather the politicians who attended that event and “[...] established himself as a catalyst for better multilateral policy-making”²³.

In 2014, the above-mentioned meeting occurred in Brisbane, one of Australia's biggest cities. In a written document regarding the priorities for that year, Tony Abbott, the then representative of the host country, asseverated that empowering the private sector was essential for the strengthening of the World economy. He also remarked that financial reforms were necessary for the participants of that forum become more resilient “[...] to future economic shocks”²⁴.

According to the International Labour Organization (ILO), around 700,000 people are unemployed in Australia nowadays²⁵. The increase in the number of jobless people, in fact, stems from the end of the “commodity boom” and has implications in the social field. In this context, there is a general concern regarding the widening of social disparities²⁶.

Due to the undoubted technological advances that have occurred in recent years, it is worth analyzing the effects arising from the development of computing, artificial intelligence and machine learning. In that regard, a study carried out by the Committee for Economic Development of Australia (CEDA) suggests that the creation of new systems related to the mining activity, which plays an extremely important role in Australia's economy, will

²⁰AUSTRALIAN GOVERNMENT DEPARTMENT OF FOREIGN AFFAIRS AND TRADE. **Australia in brief**. 2016. p.18. Available at: <<http://dfat.gov.au/about-us/publications/Documents/australia-in-brief.pdf>>. Accessed 14 may 2018.

²¹Ibid.

²²THE HERITAGE FOUNDATION. **Australia**. 2018. Available at: <<https://www.heritage.org/index/country/australia>>. Accessed 14 may 2018.

²³RIMMER, Susan Harris. **Factcheck: Did Kevin Rudd help create the G20?**. Available at: <<https://www.sbs.com.au/news/factcheck-did-kevin-rudd-help-create-the-g20>>. Accessed 14 may 2018.

²⁴ABBOTT, Tony. **Overview of Australia's presidency**. 2014. p.2. Available at: <<http://www.g20.utoronto.ca/2014/G20Australia2014conceptpaper.pdf>>. Accessed 14 may 2018.

²⁵INTERNATIONAL LABOUR ORGANIZATION. **World employment social outlook**. 2018. p.21. Available at: <http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_615594.pdf>. Accessed 14 may 2018.

²⁶ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **OECD economic surveys: Australia**. 2017. p.2. Available at: <<http://www.oecd.org/eco/surveys/Australia-2017-OECD-economic-survey-overview.pdf>>. Accessed 14 may 2018.

improve the safety and the wellbeing of the Australian people, besides boosting productivity and reducing environmental impacts²⁷.

However, that process also entails a skill-biased technological change in the labor market and consequently leads to the increase in the unemployment rates among low-skilled workers²⁸. In this sense, “[...] the percentage of workers in manual Jobs has declined [...]” due to the reduction of manufacturing output and the rise in productivity in areas such as “[...] utilities, telecommunications and agriculture”.

In this framework, there is a mismatch between the abilities of those people and the expertise required for the new jobs. The structural unemployment caused by that incongruity “[...] can last for long periods because workers need time to learn new skills and some may never acquire these”²⁹. Therefore, the Australian government ought to adopt several measures with the purpose of ensuring that those people will not remain out of work for a long time.

EUROPEAN UNION

The European Union has its own seat in the Group of Twenty meetings in consequence of its large economic power. It is a member of the forum alongside some of its members – France, Germany and Italy. The Union is represented by the President of the European Commission and the President of the European Council³⁰. They exposed, in a joint letter in July 2017, the block’s priorities in the G20. Amongst them: making the global economy work for all; making a multilateral trading system based on open and fair rules; fighting terrorism; aiding refugees; working with Africa; helping the environment; fighting tax avoidance and evasion; utilizing the potential of the digital revolution³¹.

The European Union is a major trading power. With 6.9% of the world population, the Union is responsible for over 20% of global imports and exports. Its economic strategy is to sustain growth by investing in transport, energy and research, while minimizing the impacts

²⁷COMMITTEE FOR ECONOMIC DEVELOPMENT OF AUSTRALIA. **Australia’s future workforce**. 2015. p.68. Available at: <http://www.ceda.com.au/CEDA/media/ResearchCatalogueDocuments/Research%20and%20Policy/PDF/26792-Futureworkforce_June2015.pdf>. Accessed 14 may 2018.

²⁸Ibid., p. 110.

²⁹Ibid., p.123.

³⁰EUROPEAN COMMISSION. **G20 Brochure Hamburg 2017**. Available at: <https://ec.europa.eu/commission/sites/beta-political/files/g20-brochure-hamburg-2017_en.pdf>. Access: 17 may. 2018.

³¹EUROPEAN COMMISSION. **Joint Letter G20 Hamburg**. Available at: <<https://ec.europa.eu/commission/sites/beta-political/files/joint-letter-g20-hamburg.pdf>>. Access: 17 may. 2018.

caused by economic growth in the environment. The development, in terms of gross domestic product, is ahead of the United States of America: €14,600 billion in 2015³².

As mentioned, the present group of countries is known for its major economic development. Advances in technology are also part of what makes the European Union so powerful. Currently, there is a plan to make the continent's excellent science base into a competitive advantage. For example, the Future and Emerging Technologies (FETs) actions aim to initiate the exploring of new lines of technology yet unseen³³. Furthermore, the European Strategic Energy Technology plan (SET-plan) encourages research on low-carb energy. This way, innovations can be used for transformation in the continent's energy system, making it less dangerous for the environment³⁴.

Even though the advances in technology are positive in terms of creating new jobs, a new issue is born: these jobs are not being fulfilled. Many European countries are facing difficulties in making the population able to work after the economic crisis in 2008 and the consequent rise of unemployment rates. Not everyone is qualified or has the appropriate skills to fill the innovation-based jobs which are being generated. According to the European Commission, this gap may hold back the return of meaningful growth. To solve the problem, European governments are making campaigns that encourage people to go to universities and study mathematics, engineering and science, so the gap can be filled in the future³⁵.

FEDERATIVE REPUBLIC OF BRAZIL

The Federative Republic of Brazil is a country whose territory corresponds to approximately 20.8 percent of the surface of the American Continent³⁶. In 2017, it had the

³² EUROPEAN UNION. **The economy**. Available at: <https://europa.eu/european-union/about-eu/figures/economy_en>. Access: 17 may. 2018.

³³ EUROPEAN COMMISSION. **Future and Emerging Technologies**. Available at: <<http://ec.europa.eu/programmes/horizon2020/en/h2020-section/future-and-emerging-technologies>>. Access: 17 may. 2018.

³⁴ EUROPEAN COMMISSION. **Strategic Energy Technology Plan**. Available at: <<https://ec.europa.eu/energy/en/topics/technology-and-innovation/strategic-energy-technology-plan>>. Access: 17 may. 2018.

³⁵ THE NEW YORK TIMES. **Unemployed in Europe Stymied by Lack of Technology Skills**. Available at: <<https://www.nytimes.com/2014/01/04/business/international/unemployed-in-europe-hobbled-by-lack-of-technology-skills.html>>. Access: 17 may. 2018.

³⁶CALDINI, Vera; ÍSOLA, Leda. **Atlas geográfico saraiva**. 3. ed. São Paulo: Saraiva, 2009. p.28.

fifth-largest population in the world³⁷ and was the ninth-biggest global economy³⁸. Ergo, it currently plays an extremely important role in the international geopolitical framework and utilizes interstate cooperation as a mechanism to achieve political and economic objectives³⁹.

Indeed, its Heads of Government have attended the annual summits of the Group of Twenty (G20) since 2008. In the Pittsburgh Summit, which occurred in the aforementioned year, Brazil, China, India and Russia articulated themselves and negotiated an increasing of 5% of their participation in the International Monetary Fund (IMF)⁴⁰. It is important to mention that those countries, alongside South Africa, presently compose the “BRICS”, a group which operates in the field of economic-financial and political governance⁴¹.

Over the last two decades, factors such as macroeconomic stability and favorable demographic trends “[...] allowed an expansion of private and public consumption”⁴². In that context, the Brazilian government also implemented social programs aimed at redistributing income and expanding access to education. As a result, millions of people escaped poverty, employment rates remained high and the economic growth became more inclusive⁴³.

Nonetheless, the emergence of a great political and economic crisis has hindered that progress in the social field, thus increasing unemployment⁴⁴. In fact, 11,8 percent of the people who are over 14 did not have a formal job in the last quarter of 2017⁴⁵. In a context characterized by major technological advances, it is imperative to recognize that the automation process has had numerous impacts on the labor market. Therefore, it is expected to become more polarized in the period between 2017 and 2021. In other words, the demand

³⁷WORLD POPULATION REVIEW. **Brazil population 2018**. 2018. Available at:<<http://worldpopulationreview.com/countries/brazil-population/>>. Accessed 14 may 2018.

³⁸WORLD ECONOMIC FORUM. **The world’s 10 biggest economies in 2017**. 2017. Available: <<https://www.weforum.org/agenda/2017/03/worlds-biggest-economies-in-2017/>>. Accessed 14 may 2018.

³⁹MINISTÉRIO DAS RELAÇÕES EXTERIORES. **Cooperação técnica**. [2018]. Available at: <<http://www.itamaraty.gov.br/pt-BR/politica-externa/cooperacao/3686-cooperacao-tecnica>>. Accessed 14 may 2018.

⁴⁰STUENKEL, Oliver. **Apagão diplomático no G20**. 2017. Available at:<https://brasil.elpais.com/brasil/2017/07/10/opinion/1499713814_743182.html>. Accessed 14 may 2018.

⁴¹MINISTÉRIO DAS RELAÇÕES EXTERIORES. **BRICS: Brasil, Rússia, Índia, China e África do Sul**. [2018]. Available at:<<http://www.itamaraty.gov.br/pt-BR/politica-externa/mecanismos-inter-regionais/3672-brics>>. Accessed 14 may 2018.

⁴²ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **OECD economic surveys: Brazil**. 2018. p. 6. Available at: <<http://www.oecd.org/eo/surveys/Brazil-2018-OECD-economic-survey-overview.pdf>>. Accessed 14 may 2018.

⁴³ Ibid., p.2.

⁴⁴ Ibid., p.9.

⁴⁵INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. **Pesquisa nacional por amostra de domicílios contínua: PNAD contínua**. 2017. Available at: <<https://www.ibge.gov.br/estatisticas-novoportal/sociais/trabalho/9171-pesquisa-nacional-por-amostra-de-domicilios-continua-mensal.html?edicao=19757&t=destaques>>. Accessed 14 may 2018.

for high-skilled workers will grow, whereas the number of low-skilled workers shall become proportionally smaller ⁴⁶.

GERMANY

With a torturous history, Germany went from being the most damaged and affected country after World War II to the status of Europe's largest economy. Besides that, Germany is considered the center of political, economic and social development in the continent; finally, the nation is also the World's fourth largest economy in GDP, standing behind the United States of America, China and Japan:

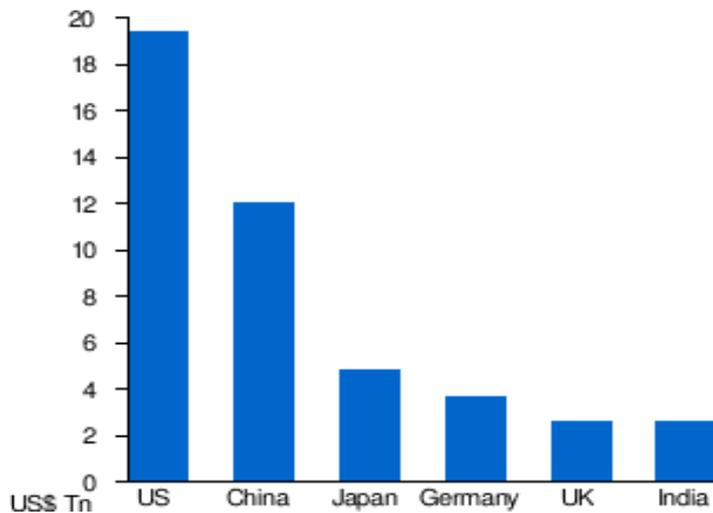


IMAGE I: Available at: <http://www.bbc.com/news/world-europe-17299607> **Germany** Access on: March 19th, 2018.

Most of that is due the country's economic bases: exportation of high-valued goods. The nation is the World's 3rd biggest export economy⁴⁷, and its main sources of exportation are: Cars, Vehicle Parts, Planes/Helicopters and Spacecraft. Therefore, it is notable the modernization of the ways of production and technology are already well-established factors in the country. The nation's major trading partners are: the United States, France, the United Kingdom, Netherlands and China.⁴⁸

⁴⁶PERRIN, Fernanda. **Automação vai mudar a carreira de 16 milhões de brasileiros até 2030**. 2017. Available at: <<http://www1.folha.uol.com.br/mercado/2018/01/1951904-16-milhoes-de-brasileiros-sofrerao-com-automacao-na-proxima-decada.shtml>>. Accessed 14 may 2018.

⁴⁷ **ATLAS Country Profile Germany** Available at: <https://atlas.media.mit.edu/en/profile/country/deu/> Access on: March 19th, 2018

⁴⁸ **DESTATIS National Economy Environment** Available at: https://www.destatis.de/EN/FactsFigures/NationalEconomyEnvironment/ForeignTrade/Tables/OrderRankGermanyTradingPartners.pdf?__blob=publicationFile Access on: March 19th, 2018

In regards of unemployment, Germany's rates are decreasing effectively, hitting the mark of 3.4%⁴⁹ (in comparison, the unemployment rate in Greece, a country very affected by the recent global economic crisis, is of 20.8%). The country upholds the status of the third second lowest unemployment rates in the European Union, amongst the age of 15-24⁵⁰. According to specialists⁵¹, those astonishing indicators happened thanks to outstanding performances in both domestic and international fields.



IMAGE II: TRADING ECONOMICS **Unemployment Rate** Available at: <https://tradingeconomics.com/germany/unemployment-rate> Access on: March 19th, 2018

In terms of technological innovation, Germany is also in the forefront of development and modernization, in the most diverse areas, from Information and communication technologies (ICT) to the manufacturing. The EU-funded projects coordinated by Germany enlighten the country's prosperity in the area.

As an example of that, the SMERobotics⁵² (The European Robot Initiative for Strengthening the Competitiveness of SMEs in Manufacturing), led by Germany, is developing a project to establish a new kind of intuitive and adaptable robots:

⁴⁹ TRADING ECONOMICS **Unemployment Rate** Available at: <https://tradingeconomics.com/germany/unemployment-rate> Access on: March 19th, 2018

⁵⁰DESTATIS **Population Labour Social** Available at: <https://www.destatis.de/Europa/EN/Topic/PopulationLabourSocial/LabourMarket/EULabourMarketCrisis.html> Access on: March 19th, 2018

⁵¹ DW **Germany's Jobless Rate Hits Fresh Record Low as Economy Booms** <http://www.dw.com/en/germanys-jobless-rate-hits-fresh-record-low-as-economy-booms/a-43180134> Access on: March 19th, 2018

⁵² SME ROBOTICS **Sme Robots** Available at: <http://www.smerobot.org/> Access on: March 19th, 2018

The purpose of SMERobotics is to create the technological foundation for profitable and intelligent robot solutions for small and medium-sized manufacturing businesses, and intelligent robotic system does not rigidly follow a specific computer program. Instead, it learns from and with its human co-worker. It continuously improves the quality of its work through human-machine interaction and can be assigned new tasks by the worker himself without the need for the involvement of an external system integrator or a lengthy stoppage in work.⁵³

ITALIAN REPUBLIC

The Italian Republic is listed as the eighth largest economy in the world, being also the second-largest manufacturing economy in Europe Union. According to the World Bank, Italy represented 5.11% of the World's economy in 1969. After rising to 5.18% in 1974, its contribution to the global economy fell to 2.81% in 2012, the lowest point in its history. Its biggest trading partners nowadays are Germany, France, United States, Spain and United Kingdom⁵⁴.

In what concerns Italy's participation at the G20, it is important to point that Italy is one of the members that, like Germany, USA, France, Canada, Japan and Russia, belonged to G7, the originator of G20 in 1999. Thus, since then, Italy has been an active country, participating regularly in conferences.

When it comes to technology, Italy occupies the 31th in the Global Innovation Index ranking⁵⁵. The country tries to become a world leader in manufacturing, machinery, and related fields, staking on digitalization, education, and strategic collaboration⁵⁶.

Nevertheless, Italy unemployment rates slightly exceed the rate of 10% of the population, which represents a considerable percentage.⁵⁷

⁵³ EC EUROPA **Digital Single Market** Available at: <https://ec.europa.eu/digital-single-market/en/news/germany-world-leader-technology-engineering-and-innovation> Access on May 19th, 2018.

⁵⁴ WORLD'S TOP EXPORTS. **Italy's Top Trading Partners.** Available at: <http://www.worldstopexports.com/italys-top-import-partners/>. Accessed in May 16, 2018.

⁵⁵ THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development.** Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

⁵⁶ MIT TECHNOLOGY REVIEW. **Italy Transforms Itself into a High-Tech Hotbed.** Available at: <https://www.technologyreview.com/s/603856/italy-transforms-itself-into-a-high-tech-hotbed/>. Accessed in May 16, 2018.

⁵⁷ TRADING ECONOMICS. **Italy Unemployment Rate.** Available at: <https://tradingeconomics.com/italy/unemployment-rate>. Accessed in May 16, 2018.

KINGDOM OF SAUDI ARABIA

The Kingdom of Saudi Arabia was named after the Al Saud dynasty, which took control in the 18th century and continued until the 20th. During that period, the nation flourished as a decisive and powerful member in the Asian region. Nowadays, the country remains as one of the few contemporary monarchies.

Saudi Arabia is also the motherland of the World's second largest religion⁵⁸: Islam, which, along with many other cultural aspects, led to the development of a tremendously strong religious self-identity. Moreover, it is vital to stress that the Al Saud family adopted a very extremist and conservative interpretation of Islamism: Wahhabism, which led to many consequences, as an example, one of the policies adopted by the government was the harsh repression of the religious groups that did not agree with that vision.

To maintain the control and growth of the country, the Al Saud family valued peace and prosperity, being those major interests of their administration. For that reason, to grant the prosperity of the nation, the country shortened its ties with the United States of America, welcoming US troops in its territory, after the 2009 Iraq's invasion of Kuwait.

Recently, in 2013⁵⁹, Wahhabism was considered by the European Parliament as one of the principal causes of global terrorism. Germany's vice-chancellor accused Saudi Arabia of financing Islamic extremism: "*We have to make clear to the Saudis that the time of looking away is over*"⁶⁰.

At the present time, the Kingdom of Saudi Arabia is considered to be one of the World's greatest economies, due to its vast oil resources. The exploration of that good made possible for the country to overcome its disadvantageous climatic conditions - an arid and desert region – and become one of the wealthiest nations.

⁵⁸ PEW FORUM **Global Religious Landscape** <http://www.pewforum.org/2012/12/18/global-religious-landscape-exec/> Access on: March 19th, 2018.

⁵⁹ THE TELEGRAPH **What is Wahhabism?** <https://www.telegraph.co.uk/news/2016/03/29/what-is-wahhabism-the-reactionary-branch-of-islam-said-to-be-the/> Access on: March 19th, 2018.

⁶⁰ THE TELEGRAPH **German Vice- Chancellor accuses Saudi Arabia of Funding Islamic Extremism in the West** <https://www.telegraph.co.uk/news/worldnews/europe/germany/12035838/German-vice-chancellor-accuses-Saudi-Arabia-of-funding-Islamic-extremism-in-the-West.html> Access on: March 19th, 2018.

In the economic international scenario, Saudi Arabia is the lead country in the exploration of petroleum, comprehending about 1/5 of the World's known reserves⁶¹. Hence, it is clear why the country was one of the founders of the OPEC⁶² (Organization of the Petroleum Exporting Countries), in 1960. Saudi Arabia's main international trading partners are the United States, China and Japan, as demonstrated by the following image:

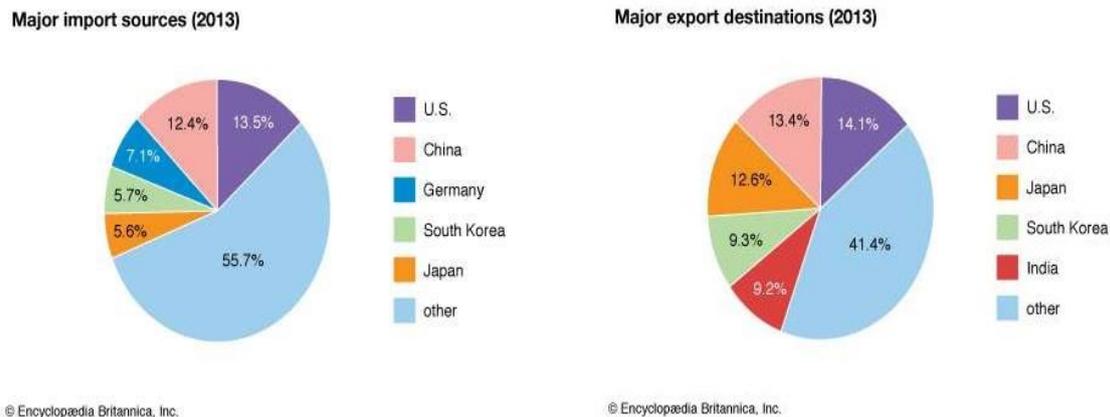


IMAGE I: Available at: BRITANNICA **Saudi Arabia Economy** <https://www.britannica.com/place/Saudi-Arabia/Economy> Access on: March 19th, 2018.

In the technological field, Saudi Arabia is considered to be in the front of the modernization in Arab countries. Amongst many measures taken by the government recently, it is possible to mention the creation of a massive tech fund with Japan's SoftBank Group as one of the most remarkable. The main goal of the country is to develop a domestic technology industry. In a recent interview, Wes Schwalje, COO of research firm Tahseen Consulting stated:

We'll likely see some big announcements regarding partnerships between flagship Saudi companies and government entities and prominent tech start-ups in the artificial intelligence (AI), robotics and autonomous vehicle sectors.

Finally, of the most shocking moves taken by the Crown was the recognition of the citizenship of the humanoid robot Sophia, developed by Honk Kong based company "Hanson Robotics". Sophia is the World's first robot to be granted the citizenship status, and by doing

⁶¹ BRITANNICA **Saudi Arabia Economy** <https://www.britannica.com/place/Saudi-Arabia/Economy> Access on: March 19th, 2018.

⁶² OPEC **Opec Web** http://www.opec.org/opec_web/en/ Access on: March 19th, 2018.

that, a question grows in the international community: what are Saudi Arabia's real intentions behind that, and even more seriously, what does it mean to be a citizen, and what are the technical differences between her and any the other Arab citizens?

PEOPLE'S REPUBLIC OF CHINA

The People's Republic of China is a country located in Eastern Asia. It has an area of 9,572,900 square kilometers and it is boarded by fourteen countries⁶³. In 2017, China was the most populous country⁶⁴ and had the second-biggest economy in the World⁶⁵. Due to its fast growth, China's economy is expected to become the largest one by 2050⁶⁶. On account of that, it is considered a major driver of global growth in contemporary times.

Since 1999, China has taken part in the G20 summit meetings. It has played an extremely important role in the discussions carried out in those events and has contributed for the restructuring of the international financial framework⁶⁷. Indeed, in the Pittsburgh summit, China, Brazil, India and Russia, through negotiations, managed to obtain an increasing of 5% of their participation in the International Monetary Fund (IMF)⁶⁸.

In conformity with data provided by the Organization for Economic Co-Operation and Development (OECD), China has experienced a decline of income inequality since 2008⁶⁹. Furthermore, "[...] the share of the rural population living below the poverty line fell from 30% in 2005 to 5.7% in 2015"⁷⁰. Nonetheless, its economic growth has had an excluding character, since the gap between the richest and the poorest remains wide⁷¹.

⁶³ENCICLOPÆDIA BRITANNICA. **China**. 2018. Available at: <<https://www.britannica.com/place/China>>. Accessed 16 may 2018.

⁶⁴WORLD POPULATION REVIEW. **China population 2018**. 2018. Available at: <<http://worldpopulationreview.com/countries/china-population/>>. Accessed 16 may 2018.

⁶⁵WORLD ECONOMIC FORUM. **The world's 10 biggest economies in 2017**. Available: <<https://www.weforum.org/agenda/2017/03/worlds-biggest-economies-in-2017/>>. Accessed 16 may 2018.

⁶⁶Ibid.

⁶⁷YONGDING, Yu. **The G20 a China: a chinese perspective**. [20--]. p.16. Available: <<https://www.uvic.ca/research/centres/globalstudies/assets/docs/publications/G20andChina.pdf>>. Accessed 16 may 2018.

⁶⁸STUENKEL, Oliver. **Apagão diplomático no G20**. 2017. Available at: <https://brasil.elpais.com/brasil/2017/07/10/opinion/1499713814_743182.html>. Accessed 16 may 2018.

⁶⁹ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **OECD economic surveys: China**. 2018. p. 39. Available at: <<http://www.oecd.org/eco/surveys/china-2017-OECD-economic-survey-overview.pdf>>. Accessed 16 may 2018.

⁷⁰Ibid.

⁷¹Ibid.

Estimates made by the International Labour Organization (ILO) indicate that, in 2018, 37.9 million people are unemployed in that country⁷². In the last decade, employment rates in agriculture have shrunk in the Asia sub regions, due to the transfer of capital to services and industry sectors⁷³. This trend, which is expected to continue over the next five years, shall make it critical for China to find alternatives regarding the reallocation of the unwaged⁷⁴.

Qua the biggest robot market in the world⁷⁵, not only will China have to absorb the people who were victims of technological unemployment but also provide them with assistance in the period when they remain out of work. According to Martin Ford, “Strengthening the health care, retirement and unemployment insurance systems [...]” will be necessary for the workers to feel more secure in this context⁷⁶.

REPUBLIC OF FRANCE

The Republic of France is one of the major world economies which are part of the Group of Seven, organization founded before the G20. It is a mixed economy, even though the private sector is the dominant one⁷⁷. It has a liberalist government, currently led by the president Emmanuel Macron. This nation is noted for its supportiveness to all kinds of freedom: of speech, of religion, of free markets. It is one of the most valued beliefs of the French society, alongside with the idea of democracy.

France’s thoughts about the Group of Twenty are optimistic; the country encourages the dialogue between developed and emerging countries. The Republic’s action in the forum shows that it is not only concerned about the world economy, but also the social area. France was also an establisher to some financial measurements in the organization, such as the fight

⁷²INTERNATIONAL LABOUR ORGANIZATION. **World employment social outlook**. 2017. p. 25. Available: <http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_541211.pdf>. Accessed 16 may 2018.

⁷³Ibid., p.24.

⁷⁴Ibid.

⁷⁵INTERNATIONAL FEDERATION OF ROBOTICS. **Executive summary world robotics 2017 industrial robots**. 2017. p.16. Available at: <https://ifr.org/downloads/press/Executive_Summary_WR_2017_Industrial_Robots.pdf>. Accessed 16 may 2018.

⁷⁶FORD, Martin. **China’s troubling robot Revolution**. 2015. Available: <<https://www.nytimes.com/2015/06/11/opinion/chinas-troubling-robot-revolution.html>>. Accessed 16 may 2018.

⁷⁷ENCYCLOPEDIA BRITANNICA. **France – Economy**. Available at: <<https://www.britannica.com/place/France/Economy>>. Access: 14 may. 2018.

against non-cooperative jurisdictions, regulation of the shadow banking system, regulation of ratings agencies, and combating volatility of commodity prices⁷⁸.

As mentioned, France is one of the leading economies of the world, and, in the contemporary society, this position comes with technological development. This is one of the sectors that the current French government is mostly working on, making plans to have improvements. For example, the Ministry for Europe and Foreign Affairs has come up with the called France's International Digital Strategy, which focus on three pillars: governance, the economy and security⁷⁹. The president Macron is optimistic about the development of the country and wants it to become Europe's leader in technology. He envisions a nation that attracts new entrepreneurs and new researchers, a center of innovations and start-ups⁸⁰.

Even though technological development is happening, the country is not facing unemployment problems because of it. According to Emmanuel Macron, those innovations create more jobs than they take. The labor issue in France is more unusual: the rates are getting high because of lack of specialization. The job offers are being left unfilled because the candidates are not qualified. The president plans on investing 15 billion in education and vocational training in order to solve the question⁸¹.

⁷⁸ FRANCE DIPLOMATIE. **France's action at the G7**. Available at:

<<https://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/making-international-regulations/article/france-s-action-at-the-g8-and-g20>>. Access: 14 may. 2018.

⁷⁹ FRANCE DIPLOMATIE. **France's International Digital Strategy: a diplomatic roadmap for the future**.

Available at: <<https://www.diplomatie.gouv.fr/en/french-foreign-policy/digital-diplomacy/digital-technology-and-international-issues/france-s-international-digital-strategy-a-diplomatic-roadmap-for-the-future/>>. Access: 14 may. 2018.

⁸⁰ CNBC. **Op-Ed: Macron's vision to make France a 'country of unicorns' requires a big shift in mentality**.

Available at: <<https://www.cnbc.com/2017/06/20/french-tech-emmanuel-macron-vision.html>>. Access: 14 may. 2018.

⁸¹ BLOOMBERG. **Macron Says French Structural Unemployment of 9% is Scandalous**. Available at:

<<https://www.bloomberg.com/news/articles/2018-02-13/macron-says-french-structural-unemployment-of-9-is-scandalous>>. Access: 14 may. 2018.

REPUBLIC OF INDIA

One of the world's oldest civilization, if the Indus Valley people were to be defined by one word, it would be plural. With more than 15 official languages and over 1.2 billion habitants, the Republic of India is the world's second most populous country and one of the richest and most diverse cultural and religious roots, as a consequence of that, the citizens of the nation developed a tremendous strongly sense of self-identity. One of the most defining aspects of that region was the division of society amongst "castes" – even though it is considered illegal nowadays, it is still present, under disguise, in the Indian community⁸². The following image demonstrates how it works:

Brahma and the origins of caste

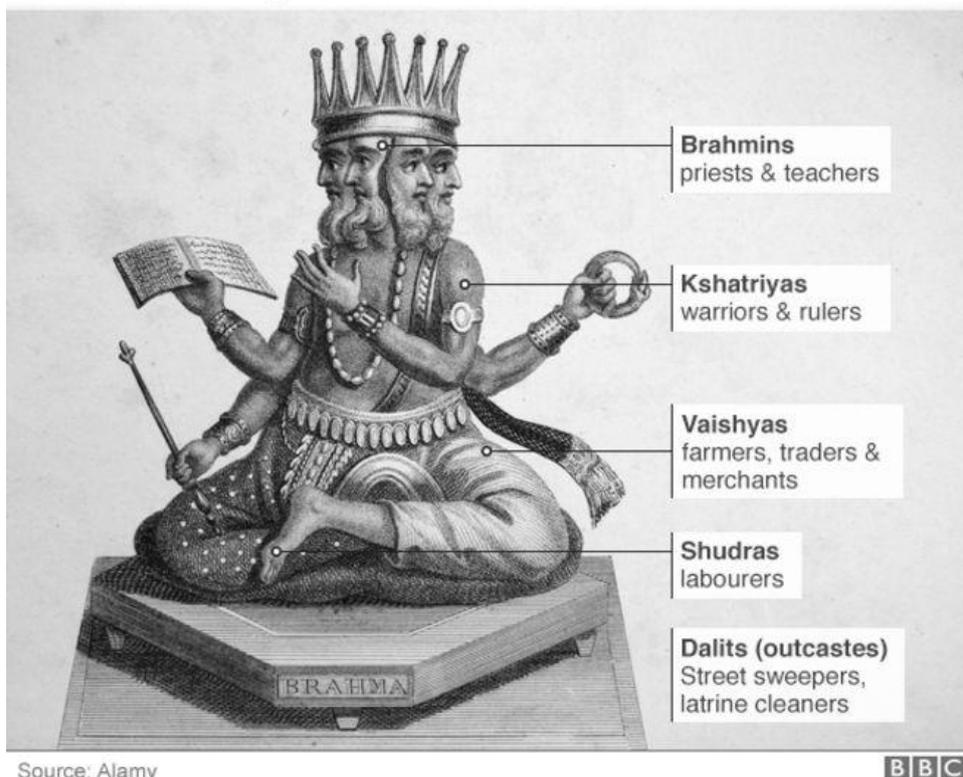


IMAGE II: Available at: <http://www.bbc.com/news/world-asia-india-35650616> Access on: May 19th, 2018.

Currently, India's economy is growing significantly, in fact, studies show that the nation's economy is expected to grow at an annual rate of 7.4% in 2018 and 7.8% in 2019⁸³, most of that due to the government's recent policies. It is crucial to note that the country has

⁸² CNN **India's caste system: Outlawed, but still omnipresent** Available at:

<https://edition.cnn.com/2016/02/23/asia/india-caste-system/index.html> Access on: May 19th, 2018.

⁸³ INTERNATIONAL MONETARY FOUNDED **World Economic Outlook** Available at:

<https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018> Access on: May 19th, 2018.

emerged as the fastest growing major economy in the world⁸⁴, furthermore, it is expected to be one of the top three economic powers of the world within the next 15 years.

Modern India has had a strong focus on science and technology, realising that it is a key element of economic growth. India is among the top most countries in the world in the field of scientific research, positioned as one of the top five nations in the field of space exploration. The country has regularly undertaken space missions, including missions to the moon and the famed Polar Satellite Launch Vehicle (PSLV)⁸⁵.

In the field of unemployment, India goes through major issues. Currently, there are more than 31 million⁸⁶ Indians unemployed, holding the title of the nation with the most unemployed citizens in the world⁸⁷. Which is, to say the least, paradoxical, given the fact that the country's economy is growing vividly – that is one of the biggest challenges for nation: to unite social and economic development.

Besides, that situation tends to get even worse: according to World Bank data, the technological modernization is estimated to threat 69%⁸⁸ of today's jobs in India, in the same research, it was demonstrated that China's rate is also alarming: 77% of the jobs are threatened by automation, along with other developing countries.

India is already struggling to create jobs amid rapid growth. Its working-age population increased by 300 million between 1991 and 2013, according to UN figures, but the number of people employed only rose by 140 million. Still, robots replacing jobs *en masse* is unrealistic in the medium term in India – or anywhere else – but the effects are already being felt. Last September, Indian textiles giant Raymond said it would replace 10,000 jobs with robots over three years.⁸⁹

⁸⁴ INDIA BRAND EQUITY FOUNDATION **About Indian Economy and Growth Rate & Statistics**

Available at: <https://www.ibef.org/economy/indian-economy-overview> Access on: May 19th, 2018.

⁸⁵ INDIA BRAND EQUITY FOUNDATION **Science and Technology** Available at:

<https://www.ibef.org/industry/science-and-technology.aspx> Access on: May 19th, 2018.

⁸⁶ OUTLOOK INDIA **India is the Nation of the Most Unemployed in the World** Available at:

<https://www.outlookindia.com/website/story/india-is-the-nation-of-the-most-unemployed-in-the-world-labour-bureau-statistics/310545> Access on: May 19th, 2018.

⁸⁸ BBC **Why Automation Could be a Threat to India's Growth** Available at:

<http://www.bbc.com/future/story/20170510-why-automation-could-be-a-threat-to-indias-growth> Access on: May 19th, 2018.

⁸⁹ *Ib dem*

REPUBLIC OF INDONESIA

Composed by several Southeast Asian islands⁹⁰, the Republic of Indonesia has the fourth-biggest population in the world⁹¹. With respect to the ethnical composition, it is extremely diverse. Indeed, more than 300 languages are spoken in its territory and some of its provinces have been demanding for independence⁹². In addition, the aforementioned State is the world's most populous Muslim-majority country. To evince that fact, it is important to refer to the 2010 census, which indicated that over 87% of the citizens of Indonesia identified as followers of that religion in that year⁹³.

The Heads of Government of the Republic of Indonesia have attended the G20 Leaders' Summit since 2008. Given the situation in which the World economy found itself at the time, that event was organized to make it possible for those political representatives to develop closer economic cooperation mechanisms. In that context, “[...] Susilo Bambang Yudhoyono [, the then president of the country in question,] regarded the G20 as an important platform to highlight Indonesia's global-political aspirations and increase the global standing of Southeast Asia's most populous nation”⁹⁴.

On that occasion, Susilo assumed an important role with regard to the protection of the interests of developing nations. His concern with the progress of those countries, in fact, is evidenced by the proposal for the creation of the Global Expenditure Support Fund (GESF), which “[...] would provide economic support to developing and emerging countries recovering from the aftermath of the global financial crisis”. That assistance would materialize, for instance, in “[...] initiatives towards labour-intensive infrastructure [...]” aimed at meeting the United Nations Development Goals⁹⁵.

According to the Heritage Foundation, Indonesia presently has the largest economy in the region where it is located⁹⁶. In spite of that, the pace of its growth has been reduced since the end of the “commodity boom”, as “[...] mineral fuels, animal and vegetal fat [...]” are

⁹⁰BRITISH BROADCASTING CORPORATION. **Indonesia country profile**. 2018. Available: <<http://www.bbc.com/news/world-asia-pacific-14921238>>. Accessed 16 may 2018.

⁹¹WORLD POPULATION REVIEW. **Indonesia population 2018**. 2018. Available: <<http://worldpopulationreview.com/countries/indonesia-population/>>. Accessed 16 may 2018.

⁹²BRITISH BROADCASTING CORPORATION, op. cit.

⁹³BRITISH BROADCASTING CORPORATION, op. cit.

⁹⁴STIFTUNG, Heinrich Böll. **Indonesia's dilemma: The G20 and the United Nations' sustainable development goals within a national context**. 2017. p.3. Available at: < https://th.boell.org/sites/default/files/e-paper_international_politics_g20_indonesia_-_baf.pdf>. Accessed 16 may 2018.

⁹⁵Ibid.

⁹⁶THE HERITAGE FOUNDATION. **Indonesia**. 2018. Available at: <<https://www.heritage.org/index/country/indonesia>>. Accessed 16 may 2018.

amongst its main exports⁹⁷. Furthermore, the Service Trade Restrictiveness Index, which was elaborated by OECD, indicates that Indonesia's economy is more closed than the majority of emerging Asian economies⁹⁸.

In consonance with the information contained in that study, Indonesia and the other developing Asian nations have been profoundly affected by the progress that has been made in the technological field⁹⁹. In this sense, it is imperative to recognize that advances in that area have reduced the costs of trade operations and encouraged the creation of new industries, besides “[...] increasing the value in goods and services [...]”¹⁰⁰.

Although technological development has boosted Indonesia's economy, there is a great concern that it shall imply job losses¹⁰¹. Indeed, a research conducted by the International Labour Organization predicts that, within a few decades, “[...] 56 percent of all employment may be automated in [...]” Indonesia¹⁰². In this context, the Government of Indonesia and the agents of private sector ought to operate in a coordinated manner with the objective of making it possible for those workers to be reinserted in the labor market, thereby minimizing the impacts resulting from technological change. Hence, it is critical that they adopt the necessary measures to increase the number of workers with a university degree, since they are less likely to be replaced¹⁰³.

REPUBLIC OF SOUTH AFRICA

South Africa is the only African member of the Group of Twenty, and although this fact gives the country more status, it also puts it in a position of pressure and responsibility. Firstly, the state cannot assume that it speaks for the whole continent. South Africa also recognizes that it is necessary to take the opportunities to improve the situation for all the neighbor countries. Therefore, one of its main concerns is to encourage donor nations in the G20 to help, specially economically, with the problems Africa faces. Some other concerns

⁹⁷Ibid.

⁹⁸ORGANIZATION FOR ECONOMIC CO-OPERATION. **Economic outlook for southeast Asia, China and India 2018**: fostering growth through digitalization. 2018. p. 27 Available at: <https://www.oecd.org/dev/SAEO2018_Preliminary_version.pdf>. Accessed 16 may 2018.

⁹⁹Ibid., p.28.

¹⁰⁰Ibid., p.31.

¹⁰¹INTERNATIONAL LABOUR ORGANIZATION. **Indonesia jobs outlook 2017**: harnessing technology for growth and job creation. 2017. p.34. Available at: <http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-jakarta/documents/publication/wcms_613628.pdf>. Accessed 16 may 2018.

¹⁰²Ibid., p.34-35.

¹⁰³Ibid., p.52-56.

include expanding the resources of multilateral banks and the IMF, as well as maintaining the global economy open¹⁰⁴.

The Republic of South Africa is a country known for its diversity in society. People have different ethnicities, speak different languages, follow different religions¹⁰⁵. The economy in this country is highly developed, being led by the tertiary sector since the beginning of the decade of 1990, when the African National Congress dominated politics after the apartheid¹⁰⁶. Currently, between the key economic activities, it is possible to find finance business, general government services and wholesale and retail trade. Altogether, those are responsible for over 50% of South Africa's GDP¹⁰⁷.

There are innovations in technology happening significantly in this nation. It already has one of the largest information technology markets inside the continent: it takes the leadership when it comes to the mobile software field, security software and electronic banking services. The biggest consumers are the Government and the Financial sector and it is still a regionalized market, but it is estimated that the private consumption will grow as well¹⁰⁸.

Those technological innovations come with a prize, and research shows that South Africa's unemployment rates are in danger of getting dangerously high because of the automation of jobs. In order to soften the problem, it is necessary for the South African society to learn a new skill: to work alongside the machines. There needs to be an expressive investment in intelligent technologies and human-machine collaboration¹⁰⁹.

¹⁰⁴ DRAPER, P.; SIDIROPOULUS, E.; LEICHER, K. **South Africa's Objectives at the G20**. Available at: <http://www.kas.de/wf/doc/kas_19454-544-2-30.pdf?100428135605>. Access: 16 may. 2018.

¹⁰⁵ SOUTH AFRICA INFO. **South Africa: fast facts**. Available at: <<https://web.archive.org/web/20080719213531/http://www.southafrica.info/about/facts.htm#people>>. Access: 16 may. 2018.

¹⁰⁶ INDEX OF ECONOMIC FREEDOM. **South Africa**. Available at: <<https://www.heritage.org/index/country/southafrica>>. Access: 16 may. 2018.

¹⁰⁷ BRAND SOUTH AFRICA. **South Africa's economy: key sectors**. Available at: <<https://www.brandsouthafrica.com/investments-immigration/economynews/south-africa-economy-key-sectors#trade>>. Access: 16 may. 2018.

¹⁰⁸ EXPORT.GOV. **South Africa – Information Technology**. Available at: <<https://www.export.gov/article?id=South-Africa-information-technology>>. Access: 16 may. 2018.

¹⁰⁹ IT NEWS AFRICA. **5.7 million jobs are at risk of total automation in South Africa**. Available at: <<http://www.itnewsafrika.com/2018/01/5-7-million-jobs-are-at-risk-of-total-automation-in-south-africa/>>. Access: 16 may. 2018.

REPUBLIC OF TURKEY

The Republic of Turkey is a nation whose economic development is closely related to the commercial sector and the provision of services. Its largest trading partners are China, Germany, Russia, United States and Italy¹¹⁰.

In what concerns the Turkish participation at the G20, it is important to point that Turkey has been an active country, participating regularly in conferences. Incidentally, Turkey hosted the summit meeting in 2015, when it was discussed, as priorities, “(i) Strengthening the Global Recovery and Lifting the Potential (ii) Enhancing Resilience (iii) Buttressing Sustainability”¹¹¹.

When the subject is technology, the Republic of Turkey occupies the 58th in the Global Innovation Index ranking¹¹². Anyway, the development of technology in this country is remarkable thanks to the numerous investments, especially in the defense industry¹¹³.

In addition, the Turkish unemployment rates have not been stable in the last decade, usually ranging from 7 to 14%. Nowadays, the index shows that nearly 10,6% of Turkish people find themselves in a jobless condition¹¹⁴.

RUSSIAN FEDERATION

Crude oil, petroleum products and natural gas comprise roughly 58% of total exports, iron and steel represent 4% and other mining sector related exports including gems and precious metals account for about 2.5%. Sales to Europe represent over 60% of total exports while Asia has an export share of roughly 30%. Russian exports to the United States, Africa and Latin America combined represent less than 5% of total shipments.

¹¹⁰ WORLD'S TOP EXPORTS. **Turkey's Top Trading Partners.** Available at: <http://www.worldstopexports.com/turkeys-top-import-partners/>. Accessed in May 19, 2018.

¹¹¹ G20. **G20 2015 Presidency priorities.** Available at: <http://g20.org.tr/wp-content/uploads/2014/12/2015-TURKEY-G-20-PRESIDENCY-FINAL.pdf>. Accessed in May 19, 2018.

¹¹² ¹¹² THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development.** Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

¹¹³ DAILY SABAH. **Turkey's technology development expenditures in defense increase.** Available at: <https://www.dailysabah.com/defense/2017/06/17/turkeys-technology-development-expenditures-in-defense-increase-by-39-pct-in-2016>. Accessed in May 20, 2018.

¹¹⁴ TRADING ECONOMICS. **Turkey Unemployment Rate.** Available at: <https://tradingeconomics.com/turkey/unemployment-rate>. Accessed in May 20, 2018.

Russia's main imports are food and ground transports, which represent 13% and 12% of total imports, respectively. Other significant imports include pharmaceuticals, textile and footwear, plastics and optical instruments. Exports peaked in 2012 reaching USD 527 billion; imports peaked in 2013 reaching USD 341 billion.

In August of 2015, Russian exports amounted to USD 25.0 billion, which marked a 39.7% contraction in annual terms. This marked the 10th consecutive contraction at a double-digit rate. Imports totaled USD 16.5 billion, which marked a 34.7% year-on-year contraction.

Russia's trade surplus is narrowing rapidly. Russia's trade surplus narrowed to USD 4.4 billion in August of this year, which came in dramatically below the USD 8.8 billion registered in the same month last year and the USD 16.2 billion the prior year. August's result prompted the 12-month rolling surplus to decrease to USD 99.5 billion, the smallest accumulated surplus in over a decade. The fall in the trade surplus continues to reflect the free fall that Russian exports have registered over the last few years.

The most important political allies (economically and military) to the Russian Federation are, basically, China, Serbia, Cuba and Syria. Furthermore, Russia hosted the 8th G20 summit in 2013.

SOUTH KOREA

After being occupied by Japan from 1905 to 1945¹¹⁵, Korea¹¹⁶ reestablished its independence, right after Japan's defeat – and consequent surrender – on World War II. The aftermath of that war led to severe consequences on the country, most precisely, its split: the southern region of the country instituted a democratic-based government, called Republic of Korea, while a communist government was set up on northern part, gaining the title of Democratic People's Republic of Korea. In 1953¹¹⁷, those two regions engaged yet another war, only this time, the south region was supported by US troops, and the northern district was sponsored by China and the former Soviet Union.

¹¹⁵ CIA **The World Factbook: South Korea** Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html> Access on: May 19th, 2018.

¹¹⁶ At that period, South Korea and North Korea were a unique nation, the Korean Peninsula.

¹¹⁷ BRITANNICA **Korean War** Available at: <https://www.britannica.com/event/Korean-War> Access on: May 19th, 2018.

Currently, South Korea is a mighty country. Transforming itself from a poor and agricultural-based economy to one of the World's most industrialized nations¹¹⁸ – those incredible results are based on one principal reason: education. To be more specific, the country's growth took place mostly due to the abundance of highly qualified educated work labor, along with the development of the orient export-orient industries¹¹⁹. The main focus of these industries is on the high-technology field, such as automobiles, information technology and electronics. The main economic partners of South Korea are, respectively, China, the United States, Honk Kong (home of the World's first humanoid citizen robot, Sophia¹²⁰), Vietnam and Japan.

In regards of the unemployment issue, South Korea is facing some problems. Firstly, according to recent studies¹²¹, one in five South Korean PhD graduates is jobless: “Contrary to popular belief, the unemployment rate among those with a PhD degree in the natural sciences and engineering exceeded that of those who studied social studies, art and physical education.”¹²². In fact, recently, in 2017, South Korea became the most automated country on earth, with one robot for every 19 humans¹²³, which led the government to apply taxes to slow down the automatization of jobs, according to industry sources, such laws could be understood as a type of “anti-robot” policy: “it can be interpreted as a similar kind of policy [as a robot tax], considering that both involve the same issue of industrial automation”¹²⁴.

That concern is not particular to South Korea, according to a PwC analysis¹²⁵, machinery and artificial intelligence could slowly replace up to a third of existing British jobs by 2030. However, the application of the so-called “robot-tax” has already been proposed to the European Parliament, in the opportunity, it was firmly rejected. According to a declaration of the International Federation of Robotics (IFR), such tax would curb innovation: “The IFR

¹¹⁸ THE GUARDIAN **South Korea Development Method** Available at: <https://www.theguardian.com/global-development/poverty-matters/2011/nov/28/south-korea-development-model> Access on: May 19th, 2018.

¹¹⁹ BRITANNICA **Korean Settlement Patterns** Available at: <https://www.britannica.com/place/South-Korea/Settlement-patterns#ref34963> Access on: May 19th, 2018.

¹²⁰ Check Saudi Arabia's Annex Guide for further information on Sophia, the robot.

¹²¹ THE KOREA BIZWARE **1 in 5 South Korean PhD Holders is Unemployed** Available at: <http://koreabizwire.com/1-in-5-south-korean-phd-holders-is-unemployed/102406> Access on: March 19th, 2018.

¹²² *Ib dem*

¹²³ E&T **South Korea considers amending tax laws to slow speed of automation** Available at: <https://eandt.theiet.org/content/articles/2017/08/south-korea-considers-amending-tax-laws-to-slow-speed-of-automation> Access on: May 19th, 2018.

¹²⁴ *Ib dem*

¹²⁵ PWC **Up to 30% of existing UK jobs could be impacted by automation by early 2030s, but this should be offset by job gains elsewhere in economy** Available at: <https://www.pwc.co.uk/press-room/press-releases/Up-to-30-percent-of-existing-UK-jobs-could-be-impacted-by-automation-by-early-2030s-but-this-should-be-offset-by-job-gains-elsewhere-in-economy.html> Access on: May 19th, 2018.

believes that the idea to introduce a robot tax would have had a very negative impact on competitiveness and employment”¹²⁶.

STATE OF JAPAN

Japan is a country of economic and business prowess, rich culture and technological development. That said, it held onto the title of the World’s second largest economy for more than 40 years, from 1968 to 2010¹²⁷. Also, the country is the fourth-leading exporter in the World with a formidable manufacturing base, world-class infrastructure, and a large and affluent consumer market¹²⁸.

After World War II, Japan entered an era of unprecedented economic growth. This growth did not spring suddenly; it was built on a solid foundation of industrial technology, erected during the Meiji era¹²⁹. Therefore, the country’s industrial structure had always been dominated by big companies, and, to a large degree, they used to develop their own technologies¹³⁰.

It is important to expose that over the course of two painful “lost decades,” Japan has lost much of its competitive edge. Its economy continues to operate below its potential. Productivity growth has steadily eroded in almost every sector, including its signature advanced manufacturing industries¹³¹.

¹²⁶ E&T South Korea considers amending tax laws to slow speed of automation Available at: <https://eandt.theiet.org/content/articles/2017/08/south-korea-considers-amending-tax-laws-to-slow-speed-of-automation> Access on: May 19th, 2018.

¹²⁷ GLOBAL SHERPA. **Japan – Country Profile, Facts, News and Original Articles**. Available at: <http://globalsherpa.org/japan/>. Access on: Apr. 12, 2018.

¹²⁸ MCKINSEY GLOBAL INSTITUTE. **The Future of Japan: Reigniting productivity and growth**. Available at: https://www.mckinsey.com/~media/McKinsey/Global%20Themes/Employment%20and%20Growth/How%20a%20private%20sector%20transformation%20could%20revive%20Japan/Future_of_Japan_Executive_summary_March_2015.ashx. Access on: May 17, 2018.

¹²⁹ NATIONAL MUSEUM OF NATURE AND SCIENCE. **Center of the History of Japanese Industrial Technology**. Available at: <http://www.kahaku.go.jp/english/institution/sts/index.html>. Access on: May 17, 2018.

¹³⁰ JAPAN INDUSTRY NEWS. **Japan: science and technology rooted in history**. Available at: <https://www.japanindustrynews.com/2015/11/japan-science-and-technology-rooted-in-history/>. Access on: May 17, 2018.

¹³¹ MCKINSEY GLOBAL INSTITUTE. **The Future of Japan: Reigniting productivity and growth**. Available at: https://www.mckinsey.com/~media/McKinsey/Global%20Themes/Employment%20and%20Growth/How%20a%20private%20sector%20transformation%20could%20revive%20Japan/Future_of_Japan_Executive_summary_March_2015.ashx. Access on: May 17, 2018.

Nowadays; Japan's economy is projected to grow slowly to 2030. It faces the combination of slower job creation, coming from economic expansion, with a large share of work, which can be automated as a result of high wages and the structure of its economy. However, Japan will also see its workforce shrink by 2030 by four million people¹³².

Japanese employers are already experiencing difficulty in filling jobs, and labor shortages will only grow more acute over time, unless the government can boost the number of working seniors¹³³. Also, agricultural employment declined from a 31% share of total employment in 1960 to 3.5 percent in 2015, while manufacturing's share of total employment dropped from its peak in 1973 of 25 percent to 13 percent in 2015¹³⁴.

Furthermore, in an advanced economy with aging population as Japan, there will be limited increase of labor demand from education, as the relative share of students in the overall population declines. Nonetheless, as with health care, the creation of these jobs would depend on the allocation of sufficient funding from public, private, and philanthropic sectors¹³⁵.

Thus, professions highly dependent on the work activities it is identified as most susceptible to automation are likely to be the most affected, especially if automation adoption occurs earlier, which we anticipate to be the case in countries with high wages such as Japan¹³⁶.

In 2013, the country began to raise the mandatory retirement age, changing it from 55 to 60 years old. Employers are also required to offer continuing employment options to

¹³² MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: < <https://assets.mckinsey.com/~media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>>. Access on: May 17, 2018.

¹³³ MCKINSEY GLOBAL INSTITUTE. **Tokyo drift: How Japan can turn its aging workforce into an advantage.** Available at: <<https://www.mckinsey.com/mgi/overview/in-the-news/tokyo-drift>>. Access on: May 17, 2018.

¹³⁴ MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: < <https://assets.mckinsey.com/~media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>>. Access on: May 17, 2018.

¹³⁵ MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: < <https://assets.mckinsey.com/~media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>>. Access on: May 17, 2018.

¹³⁶ MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: < <https://assets.mckinsey.com/~media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>>. Access on: May 17, 2018.

workers who hit that age, but seniors are often shunted into lower-paying or lower-skilled jobs¹³⁷.

Hence, it is certain to affirm that Japan is on a trajectory toward another decade of anemic growth and intensifying fiscal pressures. With its workforce shrinking, Japan must simultaneously boost productivity and labor force participation through creative adaptations for older workers and an increased focus on robotics in the workforce¹³⁸.

UNITED KINGDOM

The UK, a leading trading power and financial center, is the third largest economy in Europe after Germany and France. Agriculture is intensive, highly mechanized, and efficient by European standards, producing about 60% of food needs with less than 2% of the labor force. The UK has large coal, natural gas, and oil resources, but its oil and natural gas reserves are declining; the UK has been a net importer of energy since 2005. Services, particularly banking, insurance, and business services, are key drivers of British GDP growth. Manufacturing, meanwhile, has declined in importance but still accounts for about 10% of economic output.

In 2008, the global financial crisis hit the economy particularly hard, due to the importance of its financial sector. Falling home prices, high consumer debt, and the global economic slowdown compounded Britain's economic problems, pushing the economy into recession in the latter half of 2008 and prompting the then BROWN (Labour) government to implement a number of measures to stimulate the economy and stabilize the financial markets. Facing burgeoning public deficits and debt levels, in 2010 the then CAMERON-led coalition government (between Conservatives and Liberal Democrats) initiated an austerity program, which has continued under the new Conservative majority government.

However, the deficit still remains one of the highest in the G7, standing at 4.1% of GDP as of mid-2016, and Britain has pledged to lower its corporation tax from 20% to 17%

¹³⁷MCKINSEY GLOBAL INSTITUTE. **Tokyo drift: How Japan can turn its aging workforce into an advantage.** Available at: <<https://www.mckinsey.com/mgi/overview/in-the-news/tokyo-drift>>. Access on: May 17, 2018.

¹³⁸MCKINSEY GLOBAL INSTITUTE. **Tokyo drift: How Japan can turn its aging workforce into an advantage.** Available at: <<https://www.mckinsey.com/mgi/overview/in-the-news/tokyo-drift>>. Access on: May 17, 2018.

by 2020. Britain had a debt burden of 92.2% GDP at the end of 2016. While the UK is one of the fastest growing economies in the G7, economists are concerned about the potential negative impact of the UK's vote to leave the EU. The UK has an extensive trade relationship with other EU members through its single market membership and economic observers have warned the exit will jeopardize its position as the central location for European financial services.

The United Kingdom has an important economic and political relations with the Members of the Commonwealth, Ireland, Singapore and the United States. During the G20 summit in Hamburg (2017), the Prime Minister Theresa May stated that "UK is not losing global influence because of Brexit, insisting it will continue to be 'bold' on the world stage", especially on combating terrorism and increasing free trade.

UNITED MEXICAN STATES

Mexico, a country of southern North America, is the third largest country in Latin America. In spite of the challenges it faces as a developing country, Mexico is one of the chief economic and political forces in the region. However, Mexico is one of just three Latin American countries in the G20, along with Argentina and Brazil.

During the 20th century, Mexico made significant progress in science and technology. New universities and research institutes were established. In the other hand, Ancient Mexican civilizations developed mathematics, astronomy, calendars, and solved technological problems of water management for agriculture and flood control of the country.

Moreover, bringing to light a brief comparison of the last decade, it is important to expose that in the Center and South of Mexico, technology was less effective in 1995-99 than in 1992-95. In the North, the change in the wage performance between time periods was 32%; in the Capital, the change was 29%; in the Center, the change was -56%, and in the South it was -166%. Thus, it is relevant to note that in both periods technology still is associated with higher wages, but in the Center and South technology is related to wages by a smaller percentage in the later period than in the earlier one.

In light of this, much of Mexico's trade-dependent industry is in the North, near the U.S. border and in the Capital. It may be that these industries were more affected by liberalization and the 1994 crisis, and so the increased competition they experienced added to the value of technology for them.

Today, Mexico is amongst the top 25 countries exploring the benefits of artificial intelligence and integrating intelligent automation into their economies. Also, the country has become a solid world manufacturing powerhouse, reaching high quality levels and competitiveness that have positioned at the top levels in a series of industries.

Mexico has a young population and a growing workforce. Mid- to low-wage levels may slow automation adoption, while comparatively low GDP growth may temper growth in labor demand. The start-up scenario will create enough labor demand to offset the effects of both automation and demographics. Hence, the country's rate of future economic expansion is a grow of 15 million by 2030 of its workforce. In such a way, like the United States and Japan, the numbers suggest that Mexico may need the extra job creation from the start-up scenario plus innovation in new occupations to make full use of its workforce.

Through further cooperation, Mexico hopes to be able to effectuate effective technology transfers, to develop best practices in STI management policies, to be able to address common problems to generate a greater impact on society, and, overall, to better tackle national challenges. It's important to present that in the context of the current political environment is that Mexico is not planning to decrease its cooperation with the United States. However, there is an interest to increase cooperation with other countries.

UNITED STATES OF AMERICA

The U.S. is the 2nd leading exporter of goods and services in the world and the number one leading importer. The U.S. has consistently run a trade deficit, mainly due to the dependence on foreign oil to meet its energy needs and high domestic demand for consumer goods produced abroad, however thanks to advances in domestic oil production, the energy gap is closing. The main trading partners of the U.S. are Canada, China, Mexico and Japan. Canada is the main destination for U.S. exports, whereas China is the main source of imports.

The U.S. plays a major role in the international trade system and is generally seen as a proponent of reduced trade barriers and free trade agreements. The United States currently has more than a dozen free trade agreements in place. Among them are the North American Free Trade Agreement (NAFTA), which was created in conjunction with Canada and Mexico in 1994. The United States is also an active member of the World Trade Organization (WTO).

The United States nourish a good relationship with the European Union, especially with France and Germany. Furthermore, the United Kingdom is a historical partner. On a third level, there good trade partners, such as China, Japan and South Korea. Because of the territorial proximity and the NAFTA deals, also Canada and Mexico.

During an interview conducted by Stewart Patrick (Council of Foreign Relations), an U.S. Official answered main questions about the United Perspectives on the G20. Their main objectives were stated as managing crisis in an open and stable economy and steering global economy.

“Crisis Management to Preserve a Stable and Open World Economy. U.S. officials regard the G-20 as the most important crisis committee for the world economy. It provides a standing venue where leaders of leading economies establish close working relationships and can coalesce in emergencies. During the depths of the global credit crisis, world leaders feared that the world economy might not only collapse into depression but also fragment into competing blocs, as nations adopted discriminatory national policies and tit-for-tat protectionist strategies, leading to a retaliatory spiral. Although the acute phase of the crisis and global downturn have passed, U.S. officials regard the G20 as an indispensable standing mechanism to coordinate global responses to future crises—and to restore global financial stability, promote recovery, and ensure sustained growth in their aftermath.

Steering the global economy: Beyond crisis management, Washington hopes the G20 will become a standing economic steering group for the global economy, capable of breaking logjams and driving progress through leaders-level agreement on critical economic issues. As other formal multilateral institutions, most notably the IMF and World Bank, become less oriented toward (and dominated by) the traditional G8, the G20 becomes the place for leaders to hash out disagreements and (hopefully) provide harmonized guidance to national representatives in these bodies. Still, U.S. officials are realistic. They consider it inevitable that the G20 will be less nimble as it shifts from a “wartime” to a “peacetime” footing, and as the divergent worldviews and priorities of members come to the fore.”

REFERENCES

ATLAS **Country Profile Germany** Available at:

<https://atlas.media.mit.edu/en/profile/country/deu/> Access on: March 19th, 2018

AUSTRALIAN GOVERNMENT. **Area of Australia:** states and territories. [20--]. Available at: <<http://www.ga.gov.au/scientific-topics/national-location-information/dimensions/area-of-australia-states-and-territories>>. Accessed 14 may 2018.

BBC **Why Automation Could be a Threat to India's Growth** Available at: <http://www.bbc.com/future/story/20170510-why-automation-could-be-a-threat-to-indias-growth> Access on: May 19th, 2018.

BLOOMBERG. **Macron Says French Structural Unemployment of 9% is Scandalous.** Available at: <<https://www.bloomberg.com/news/articles/2018-02-13/macron-says-french-structural-unemployment-of-9-is-scandalous>>. Access: 14 may. 2018.

BRAND SOUTH AFRICA. **South Africa's economy: key sectors.** Available at: <<https://www.brandsouthafrica.com/investments-immigration/economynews/south-africa-economy-key-sectors#trade>>. Access: 16 may. 2018.

BRITANNICA **Korean War** Available at: <https://www.britannica.com/event/Korean-War> Access on: May 19th, 2018.

BRITANNICA **Saudi Arabia Economy** <https://www.britannica.com/place/Saudi-Arabia/Economy> Access on: March 19th, 2018.

BRITANNICA. **Argentina.** Available at: <<https://www.britannica.com/place/Argentina>>. Access on: May 04, 2018.

BRITANNICA. **Argentina.** Available at: <<https://www.britannica.com/place/Argentina>>. Access on: May 10, 2018.

BRITANNICA. **China.** 2018. Available at: <<https://www.britannica.com/place/China>>. Accessed 16 may 2018.

BRITANNICA. **France – Economy.** Available at: <https://www.britannica.com/place/France/Economy>>. Access: 14 may. 2018.

BRITISH BROADCASTING CORPORATION. **Indonesia country profile.** 2018. Available: <http://www.bbc.com/news/world-asia-pacific-14921238>>. Accessed 16 may 2018.

BRITANNICA **Korean Settlement Patterns** Available at: <https://www.britannica.com/place/South-Korea/Settlement-patterns#ref34963> Access on: May 19th, 2018.

CALDINI, Vera; ÍSOLA, Leda. **Atlas geográfico saraiva.** 3. ed. São Paulo: Saraiva, 2009. p.28.

CANADA. **Canada at the G20.** Available at: http://www.international.gc.ca/world-monde/international_relations-relations_internationales/g20/index.aspx?lang=eng#future. Accessed in May 19, 2018.

CIA **The World Factbook: South Korea** Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html> Access on: May 19th, 2018.

CNBC. **Op-Ed: Macron’s vision to make France a ‘country of unicorns’ requires a big shift in mentality.** Available at: <https://www.cnbc.com/2017/06/20/french-tech-emmanuel-macron-vision.html>>. Access: 14 may. 2018.

CNN **India's caste system: Outlawed, but still omnipresent** Available at: <https://edition.cnn.com/2016/02/23/asia/india-caste-system/index.html> Access on: May 19th, 2018.

COMMITTEE FOR ECONOMIC DEVELOPMENT OF AUSTRALIA. **Australia’s future workforce.** 2015. p.68. Available at: http://www.ceda.com.au/CEDA/media/ResearchCatalogueDocuments/Research%20and%20Policy/PDF/26792-Futureworkforce_June2015.pdf>. Accessed 14 may 2018.

COUNCIL OF COUNCILS. Taking on Technology in Argentina's G20 Presidency.
Available at: <https://www.cfr.org/councilofcouncils/global_memos/p39170>. Access on:
May 10, 2018.

DAILY SABAH. Turkey's technology development expenditures in defense increase.
Available at: <https://www.dailysabah.com/defense/2017/06/17/turkeys-technology-development-expenditures-in-defense-increase-by-39-pct-in-2016>. Accessed in May 20, 2018.

DESTATIS National Economy Environment Available at:
https://www.destatis.de/EN/FactsFigures/NationalEconomyEnvironment/ForeignTrade/Tables/OrderRankGermanyTradingPartners.pdf?__blob=publicationFile Access on: March 19th,
2018

DESTATIS Population Labour Social Available at:
<https://www.destatis.de/Europa/EN/Topic/PopulationLabourSocial/LabourMarket/EULabourMarketCrisis.html> Access on: March 19th, 2018
[development/poverty-matters/2011/nov/28/south-korea-development-model](https://www.destatis.de/EN/Topic/PopulationLabourSocial/LabourMarket/EULabourMarketCrisis.html) Access on: May
19th, 2018.

DRAPER, P.; SIDIROPOULUS, E.; LEICHER, K. South Africa's Objectives at the G20.
Available at: <http://www.kas.de/wf/doc/kas_19454-544-2-30.pdf?100428135605>. Access:
16 may. 2018.

DW Germanys Jobless Rate Hits Fresh Record Low as Economy Booms
<http://www.dw.com/en/germanys-jobless-rate-hits-fresh-record-low-as-economy-booms/a-43180134> Access on: March 19th, 2018

E&T South Korea considers amending tax laws to slow speed of automation Available at:
<https://eandt.theiet.org/content/articles/2017/08/south-korea-considers-amending-tax-laws-to-slow-speed-of-automation> Access on: May 19th, 2018.

EC EUROPA Digital Single Market Available at: <https://ec.europa.eu/digital-single-market/en/news/germany-world-leader-technology-engineering-and-innovation> Access on
May 19th, 2018.

EUROPEAN COMMISSION. **Future and Emerging Technologies**. Available at: <<http://ec.europa.eu/programmes/horizon2020/en/h2020-section/future-and-emerging-technologies>>. Access: 17 may. 2018.

EUROPEAN COMMISSION. **G20 Brochure Hamburg 2017**. Available at: <https://ec.europa.eu/commission/sites/beta-political/files/g20-brochure-hamburg-2017_en.pdf>. Access: 17 may. 2018.

EUROPEAN COMMISSION. **Joint Letter G20 Hamburg**. Available at: <<https://ec.europa.eu/commission/sites/beta-political/files/joint-letter-g20-hamburg.pdf>>. Access: 17 may. 2018.

EUROPEAN COMMISSION. **Strategic Energy Technology Plan**. Available at: <<https://ec.europa.eu/energy/en/topics/technology-and-innovation/strategic-energy-technology-plan>>. Access: 17 may. 2018.

EUROPEAN UNION. **The economy**. Available at: <https://europa.eu/european-union/about-eu/figures/economy_en>. Access: 17 may. 2018.

EXPORT.GOV. **South Africa – Information Technology**. Available at: <<https://www.export.gov/article?id=South-Africa-information-technology>>. Access: 16 may. 2018.

FORD, Martin. **China's troubling robot Revolution**. 2015. Available: <<https://www.nytimes.com/2015/06/11/opinion/chinas-troubling-robot-revolution.html>>. Accessed 16 may 2018.

FRANCE DIPLOMATIE. **France's action at the G7**. Available at: <<https://www.diplomatie.gouv.fr/en/french-foreign-policy/economic-diplomacy-foreign-trade/making-international-regulations/article/france-s-action-at-the-g8-and-g20>>. Access: 14 may. 2018.

FRANCE DIPLOMATIE. **France's International Digital Strategy: a diplomatic roadmap for the future**. Available at: <<https://www.diplomatie.gouv.fr/en/french-foreign-policy/digital-diplomacy/digital-technology-and-international-issues/france-s-international-digital-strategy-a-diplomatic-roadmap-for-the-future/>>. Access: 14 may. 2018.

G20. **G20 2015 Presidency priorities.** Available at: <http://g20.org.tr/wp-content/uploads/2014/12/2015-TURKEY-G-20-PRESIDENCY-FINAL.pdf>. Accessed in May 19, 2018.

GLOBAL SHERPA. **Japan – Country Profile, Facts, News and Original Articles.** Available at: <http://globalsherpa.org/japan/>. Access on: Apr. 12, 2018.

IDB IMPROVING LIVES. **The IDB and technological innovation in Argentina.** Available at: <https://www.iadb.org/en/news/webstories/2011-05-27/the-idb-and-technological-innovation-in-argentina%2C9393.html>. Access on: May 04, 2018.

INDEX OF ECONOMIC FREEDOM. **South Africa.** Available at: <https://www.heritage.org/index/country/southafrica>. Access: 16 may. 2018.

INDIA BRAND EQUITY FOUNDATION **About Indian Economy and Growth Rate & Statistics** Available at: <https://www.ibef.org/economy/indian-economy-overview> Access on: May 19th, 2018.

INDIA BRAND EQUITY FOUNDATION **Science and Technology** Available at: <https://www.ibef.org/industry/science-and-technology.aspx> Access on: May 19th, 2018.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. **Pesquisa nacional por amostra de domicílios contínua:** PNAD contínua. 2017. Available at: <https://www.ibge.gov.br/estatisticas-novoportal/sociais/trabalho/9171-pesquisa-nacional-por-amostra-de-domicilios-continua-mensal.html?edicao=19757&t=destaques>. Accessed 14 may 2018.

INTERNATIONAL FEDERATION OF ROBOTICS. **Executive summary world robotics 2017 industrial robots.** 2017. p.16. Available at: https://ifr.org/downloads/press/Executive_Summary_WR_2017_Industrial_Robots.pdf. Accessed 16 may 2018.

INTERNATIONAL LABOUR ORGANIZATION. **Indonesia jobs outlook 2017: harnessing technology for growth and job creation.** 2017. p.34. Available at: <http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-jakarta/documents/publication/wcms_613628.pdf>. Accessed 16 may 2018

INTERNATIONAL LABOUR ORGANIZATION. **World employment social outlook.** 2017. p. 25. Available: <http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_541211.pdf>. Accessed 16 may 2018.

INTERNATIONAL MONETARY FOUND **World Economic Outlook** Available at: <https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018> Access on: May 19th, 2018.

IT NEWS AFRICA. **5.7 million jobs are at risk of total automation in South Africa.** Available at: <<http://www.itnewsafrika.com/2018/01/5-7-million-jobs-are-at-risk-of-total-automation-in-south-africa/>>. Access: 16 may. 2018.

JAPAN INDUSTRY NEWS. **Japan: science and technology rooted in history.** Available at: <<https://www.japanindustrynews.com/2015/11/japan-science-and-technology-rooted-in-history/>>. Access on: May 17, 2018.

MCKINSEY GLOBAL INSTITUTE. **The Future of Japan: Reigniting productivity and growth.** Available at: <https://www.mckinsey.com/~/media/McKinsey/Global%20Themes/Employment%20and%20Growth/How%20a%20private%20sector%20transformation%20could%20revive%20Japan/Future_of_Japan_Executive_summary_March_2015.ashx>. Access on: May 17, 2018.

MCKINSEY GLOBAL INSTITUTE. **Tokyo drift: How Japan can turn its aging workforce into an advantage.** Available at: <<https://www.mckinsey.com/mgi/overview/in-the-news/tokyo-drift>>. Access on: May 17, 2018.

MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: <<https://assets.mckinsey.com/~/media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>>. Access on: May 17, 2018.

MCKINSEY&COMPANY. **Jobs lost, jobs gained: workforce transitions in a time of automation.** Available at: <https://assets.mckinsey.com/~media/BAB489A30B724BECB5DEDC41E9BB9FAC.ashx>. Access on: May 17, 2018.

MENTAL WORKERS. **Technology Industry is Canada's Fastest Growing Economic Sector.** Available at: <https://www.mentorworks.ca/blog/market-trends/canadian-technology-industry/>. Accessed in May 16, 2018.

MINISTÉRIO DAS RELAÇÕES EXTERIORES. **BRICS:** Brasil, Rússia, Índia, China e África do Sul. [2018]. Available at: <http://www.itamaraty.gov.br/pt-BR/politica-externa/mecanismos-inter-regionais/3672-brics>. Accessed 14 may 2018.

MINISTÉRIO DAS RELAÇÕES EXTERIORES. **Cooperação técnica.** [2018]. Available at: <http://www.itamaraty.gov.br/pt-BR/politica-externa/cooperacao/3686-cooperacao-tecnica>. Accessed 14 may 2018.

MIT TECHNOLOGY REVIEW. **Italy Transforms Itself into a High-Tech Hotbed.** Available at: <https://www.technologyreview.com/s/603856/italy-transforms-itself-into-a-high-tech-hotbed/>. Accessed in May 16, 2018.

NATIONAL MUSEUM OF NATURE AND SCIENCE. **Center of the History of Japanese Industrial Technology.** Available at: <http://www.kahaku.go.jp/english/institution/sts/index.html>. Access on: May 17, 2018.

OPEC **Opec Web** http://www.opec.org/opec_web/en/ Access on: March 19th, 2018.

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **OECD economic surveys: Brazil.** 2018. p. 6. Available at: <http://www.oecd.org/eco/surveys/Brazil-2018-OECD-economic-survey-overview.pdf>. Accessed 14 may 2018.

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **OECD economic surveys: China.** 2018. p. 39. Available at: <http://www.oecd.org/eco/surveys/china-2017-OECD-economic-survey-overview.pdf>. Accessed 16 may 2018.

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT. **Selected indicators for Australia.** Available at: <<https://data.oecd.org/australia.htm>>. Accessed 14 may 2018.

ORGANIZATION FOR ECONOMIC CO-OPERATION. **Economic outlook for southeast Asia, China and India 2018: fostering growth through digitalization.** 2018. p. 27
Available at: <https://www.oecd.org/dev/SAEO2018_Preliminary_version.pdf>. Accessed 16 may 2018.

OUTLOOK INDIA **India is the Nation of the Most Unemployed in the World Available**
at: <https://www.outlookindia.com/website/story/india-is-the-nation-of-the-most-unemployed-in-the-world-labour-bureau-statistics/310545> Access on: May 19th, 2018.

PERRIN, Fernanda. **Automação vai mudar a carreira de 16 milhões de brasileiros até 2030.** 2017. Available at: <<http://www1.folha.uol.com.br/mercado/2018/01/1951904-16-milhoes-de-brasileiros-sofrerao-com-automacao-na-proxima-decada.shtml>>. Accessed 14 may 2018.

PEW FORUM **Global Religious Landscape** <http://www.pewforum.org/2012/12/18/global-religious-landscape-exec/> Access on: March 19th, 2018.

PWC **Up to 30% of existing UK jobs could be impacted by automation by early 2030s, but this should be offset by job gains elsewhere in economy** Available at:
<https://www.pwc.co.uk/press-room/press-releases/Up-to-30-percent-of-existing-UK-jobs-could-be-impacted-by-automation-by-early-2030s-but-this-should-be-offset-by-job-gains-elsewhere-in-economy.html> Access on: May 19th, 2018.

SME ROBOTICS **Sme Robots** Available at: <http://www.smerobot.org/> Access on: March 19th, 2018

SOUTH AFRICA INFO. **South Africa: fast facts.** Available at:
<<https://web.archive.org/web/20080719213531/http://www.southafrica.info/about/facts.htm#people>>. Access: 16 may. 2018.

STIFTUNG, Heinrich Böll. **Indonesia's dilemma: The G20 and the United Nations' sustainable development goals within a national context.** 2017. p.3. Available at: <https://th.boell.org/sites/default/files/e-paper_international_politics_g20_indonesia_-_baf.pdf>. Accessed 16 may 2018.

STUENKEL, Oliver. **Apagão diplomático no G20.** 2017. Available at: <https://brasil.elpais.com/brasil/2017/07/10/opinion/1499713814_743182.html>. Accessed 16 may 2018.

STUENKEL, Oliver. **Apagão diplomático no G20.** 2017. Available at:<https://brasil.elpais.com/brasil/2017/07/10/opinion/1499713814_743182.html>. Accessed 14 may 2018.

THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development.** Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development.** Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

THE GLOBAL INNOVATION INDEX. **The Global Innovation Index 2015: Effective Innovation Policies for Development.** Available at: <https://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2015-v5.pdf>. Accessed in May 16, 2018.

THE GUARDIAN **South Korea Development Method** Available at: <https://www.theguardian.com/global->

THE HERITAGE FOUNDATION. **Indonesia.** 2018. Available at: <<https://www.heritage.org/index/country/indonesia>>. Accessed 16 may 2018.

THE KOREA BIZWARE 1 in 5 South Korean PhD Holders is Unemployed Available at: <http://koreabizwire.com/1-in-5-south-korean-phd-holders-is-unemployed/102406> Access on: March 19th, 2018.

THE NEW YORK TIMES. Unemployed in Europe Stymied by Lack of Technology Skills. Available at: <https://www.nytimes.com/2014/01/04/business/international/unemployed-in-europe-hobbled-by-lack-of-technology-skills.html>. Access: 17 may. 2018.

THE NEXT WEB. Argentina: A look into Latin America's most global tech hub. Available at: <https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>. Access on: May 04, 2018.

THE NEXT WEB. Argentina: A look into Latin America's most global tech hub. Available at: <https://thenextweb.com/contributors/2017/07/04/argentina-a-look-into-latin-americas-most-global-tech-hub/>. Access on: May 04, 2018

THE TELEGRAPH German Vice- Chancellor accuses Saudi Arabia of Funding Islamic Extremism in the West
<https://www.telegraph.co.uk/news/worldnews/europe/germany/12035838/German-vice-chancellor-accuses-Saudi-Arabia-of-funding-Islamic-extremism-in-the-West.html> Access on: March 19th, 2018.

THE TELEGRAPH What is Wahhabism?
<https://www.telegraph.co.uk/news/2016/03/29/what-is-wahhabism-the-reactionary-branch-of-islam-said-to-be-the/> Access on: March 19th, 2018.

THE WORLD ACADEMY OF SCIENCES. Argentina: A Nation for Innovation. Available at: <https://twas.org/article/argentina-nation-innovation>. Access on: May 10 2018.

THE WORLD ACADEMY OF SCIENCES. Argentina: A Nation for Innovation. Available at: <https://twas.org/article/argentina-nation-innovation>. Access on: May 04, 2018.

TRADING ECONOMICS Unemployment Rate Available at: <https://tradingeconomics.com/germany/unemployment-rate> Access on: March 19th, 2018

TRADING ECONOMICS. **Canada Unemployment Rate.** Available at: <https://tradingeconomics.com/canada/unemployment-rate>. Accessed in May 16, 2018.

TRADING ECONOMICS. **Italy Unemployment Rate.** Available at: <https://tradingeconomics.com/italy/unemployment-rate>. Accessed in May 16, 2018.

TRADING ECONOMICS. **Turkey Unemployment Rate.** Available at: <https://tradingeconomics.com/turkey/unemployment-rate>. Accessed in May 20, 2018.

WIKIPEDIA. **List of the largest trading partners of Canada.** Available at: https://en.wikipedia.org/wiki/List_of_the_largest_trading_partners_of_Canada; accessed in May 16, 2018.

WORLD BANK. **Technological Change and the Labor Market in Argentina and Uruguay.** Available at: <http://documents.worldbank.org/curated/en/171901507816912979/pdf/WPS8215.pdf>. Access on: May 10, 2018.

WORLD BANK. **Technological Change and the Labor Market in Argentina and Uruguay.** Available at: <http://documents.worldbank.org/curated/en/171901507816912979/pdf/WPS8215.pdf>. Access on: May 04, 2018.

WORLD ECONOMIC FORUM. **The world's 10 biggest economies in 2017.** 2017. Available: <https://www.weforum.org/agenda/2017/03/worlds-biggest-economies-in-2017/>. Accessed 14 may 2018.

WORLD ECONOMIC FORUM. **The world's 10 biggest economies in 2017.** Available: <https://www.weforum.org/agenda/2017/03/worlds-biggest-economies-in-2017/>. Accessed 16 may 2018.

WORLD POPULATION REVIEW. **Australia population 2018.** 2018. Available at: <http://worldpopulationreview.com/countries/australia-population/>. Accessed 14 may 2018.

WORLD POPULATION REVIEW. **Brazil population 2018**. 2018. Available at: <<http://worldpopulationreview.com/countries/brazil-population/>>. Accessed 14 may 2018.

WORLD POPULATION REVIEW. **China population 2018**. 2018. Available at: <<http://worldpopulationreview.com/countries/china-population/>>. Accessed 16 may 2018.

WORLD POPULATION REVIEW. **Indonesia population 2018**. 2018. Available: <<http://worldpopulationreview.com/countries/indonesia-population/>>. Accessed 16 may 2018.

WORLD'S TOP EXPORTS. **Italy's Top Trading Partners**. Available at: <http://www.worldstopexports.com/italys-top-import-partners/>. Accessed in May 16, 2018.

YONGDING, Yu. **The G20 a China**: a chinese perspective. [20--]. p.16. Available: <<https://www.uvic.ca/research/centres/globalstudies/assets/docs/publications/G20andChina.pdf>>. Accessed 16 may 2018.