



**SRMUN CHARLOTTE 2020**  
***Redefining the Role of International Organizations in the New Global Era***  
**March 26-28, 2020**  
**[G20\\_charlotte@srmun.org](mailto:G20_charlotte@srmun.org)**

Delegates,

Welcome to SRMUN Charlotte 2020 and the Group of Twenty (G-20). My name is LeAnna Christensen, and I have the pleasure of serving as your Director for the G-20. This will be my second time as a SRMUN Charlotte staff member. Previously, I served as the Assistant Director for General Assembly First at Charlotte 2019 and have been involved in Model United Nations (MUN) for almost seven years. In May 2019, I graduated from Kennesaw State University with a BBA in International Business. Our committee's Assistant Director will be Philippe Lefevre. This will be Philippe's first time as a SRMUN staff member, but he is by no means new to MUN as he has been a delegate and staff member at multiple conferences internationally. Philippe is working towards his Master's Degree in International Politics at Katholieke Universiteit Leuven in Belgium.

The G-20 was established to address the need for sustainability of and stability for the international economic system. The G-20's objectives are: to serve as a deliberative summit that focuses on coordination and cooperation between Member States to reach international sustainable growth, to promote financial regulations that limit risk, and to build a new international economic structure. Unlike a decision-making committee, the informal and deliberative nature of the G-20 forum allows it to focus on establishing and promoting international standards that increase transparency and strengthen international financial systems. Some of these standards include having balanced and fair geographical representation and including other non-governmental organizations and UN agencies in the discussions.

With a focus on the mission of the G-20 and the SRMUN Charlotte 2020 theme of "*Forging Connections: Building a Community Among Nations Through Diplomacy*" we have developed the following topics for delegates to discuss at the conference:

- I. Exploring the Use of Automation within Advanced and Emerging Economies
- II. Enhancing Guidelines on Sustainable Finance Operations

This background guide provides an introduction to the committee and the topics that will be debated at SRMUN Charlotte 2020. It should be utilized as a foundation for a delegate's independent research. However, while we have attempted to provide a holistic analysis of the issues, the background guide should not be used as the single mode of analysis for the topics. Delegates are expected to go beyond the background guide and engage in intellectual inquiry of their own. The position papers for the committee should reflect the complexity of these issues and their externalities. Delegations are expected to submit one position paper that covers both topics and be prepared for vigorous discussion at the conference.

Position papers should be no longer than two pages in length (single spaced) and demonstrate your Member State's position, policies, and recommendations on each of the two topics. For more detailed information about formatting and how to write position papers, delegates can visit [srmun.org](http://srmun.org). **All position papers MUST be submitted no later than Friday, March 6, 2020, by 11:59pm EST via the SRMUN website.**

Philippe and I are very excited to be serving as your Dais for the G-20. We wish you all the best of luck in your conference preparation and look forward to working with you in the near future. Please feel free to contact Deputy Director-General Maureen Johnston, Philippe, or myself if you have any questions while preparing for the conference.

LeAnna Christensen  
Director  
[G20\\_charlotte@srmun.org](mailto:G20_charlotte@srmun.org)

Philippe Lefevre  
Assistant Director  
[G20\\_charlotte@srmun.org](mailto:G20_charlotte@srmun.org)

Maureen Johnston  
Deputy-Director General  
[ddg\\_charlotte@srmun.org](mailto:ddg_charlotte@srmun.org)

## History of the Group of Twenty

The Group of Twenty, commonly referred to as G-20, was established in September of 1999.<sup>1</sup> This body was created to address the need for sustainability of and stability in the international economic systems.<sup>2</sup> The stated purpose of the G-20 is to be a deliberative body that focuses on the coordination of policy among the Member States to achieve sustainable growth, promote financial regulations that decrease risk, and produce a new global economic infrastructure.<sup>3</sup> Unlike many United Nations (UN) decision-making bodies, the deliberative and informal structure of G-20 allows it to concentrate on recommending international standards that strengthen financial systems and increase transparency.<sup>4</sup> These recommendations include having balanced and fair representation due to the geographical layout of the Members as well as including Member States that lead regional forums such as the African Union and Arab League.<sup>5</sup>

Formally known as the “Summit on Financial Markets and the World Economy” and being comprised of Ministers and Central Bank Governors of 20 Member States, G-20 was created on 25 September 1999. When the group’s creation was announced, the stated purpose was to “broaden the dialogue on key economic and financial policy issues among systemically significant economies and promote co-operation to achieve stable and sustainable world economic growth that benefits all.”<sup>6</sup> The concept for the forum was originally created by the Group of Seven (G7) due to the need for advanced dialogue that would uphold the purpose and values of the Bretton Woods Institutional System.<sup>7</sup> The Bretton Woods documents, which were created after World War II, were aimed to address the problems in the current international financial system after the negative economic effects of the war and of post-war reconstruction.<sup>8</sup>

Although the G7 was effective for discussing economic issues, it did not have broad enough representation to address the issues of development and the role of G7 in developing the international economy. This can be seen throughout the economic downturn of Latin America 1997-1999. A specific example of the shortcomings of G7 can be seen when Thailand abandoned the practice of matching their local currency, the Baht, to that of the United States Dollar (USD), resulting in a rapid decline in the value of the Baht, negatively impacting Indonesia and the Republic of Korea in addition to Thailand.<sup>9</sup> Overall, this resulted in a regional stock market decline and lowered import revenues.<sup>10</sup> This caused certain currencies to drop globally, as much as 38 percent.<sup>11</sup> Crises like this confirmed that the global economy had become increasingly integrated. As international trading rose, domestic capital markets became more liberalized, and Member State’s capital accounts became more open.<sup>12</sup>

The G-20 was established to deal with those problems and to anticipate the needs of the international community as time passed.<sup>13</sup> As G-20 is a deliberative and open form body, “there is no formal voting system as in some formal international economic institutions.”<sup>14</sup> However, the body must be in agreement about every decision as “all

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<sup>1</sup> Kirton, John. "G20 Information Centre." What Is the G20? November 30, 1999, <http://www.g20.utoronto.ca/g20whatisit.html> (Accessed June 14, 2019).

<sup>2</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>3</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>4</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>5</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>6</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>7</sup> Kirton, John. "G20 Information Centre." What Is the G20?

<sup>8</sup> “About the Bretton Woods institutions,” The Bretton Woods Committee. <http://www.brettonwoods.org/page/about-the-bretton-woods-institutions> (Accessed June 14, 2019).

<sup>9</sup> “Asian Financial Crisis,” Investopedia. <http://www.investopedia.com/terms/a/asian-financial-crisis.asp> (Accessed June 14, 2019).

<sup>10</sup> “Asian Financial Crisis,” Investopedia.

<sup>11</sup> “Asian Financial Crisis,” Investopedia.

<sup>12</sup> “The Group of Twenty: A History,” University of Toronto. 2008. [www.g20.utoronto.ca/docs/g20history.pdf](http://www.g20.utoronto.ca/docs/g20history.pdf) (Accessed June 14, 2019).

<sup>13</sup> “The Group of Twenty: A History,” University of Toronto.

<sup>14</sup> Nelson, Rebecca. “The G-20 and International Economic Cooperation: Background and Implications for Congress.” September 10, 2018. <https://fas.org/sgp/crs/row/R40977.pdf>. (Accessed July 10, 2019).

agreements, comments, recommendations, and policy by the G-20 finance ministers, central bankers, and leaders are drafted by consensus.”<sup>15</sup> This means that each Member State maintains equal power in the summit.<sup>16</sup>

Known as being the “premier forum for international cooperation on the economic and financial issues,” the G-20 is comprised of 19 Member States, and the European Union (EU).<sup>17</sup> The seats in the group reflect two-thirds of the world's population as well as 80 percent of the global gross domestic product (GDP).<sup>18</sup> The G-20 has also allotted for five yearlong term non-Member States seats, one of those being permanently extended to Spain, which has never requested full membership.<sup>19</sup> These members are generally representatives of regional bodies and organizations, such as the chair from the Association of Southeast Asian Nations and the New Partnership for Africa's Development, and the slots are allocated by the host Member State of the Summit.<sup>20</sup> Other formal relations of the G-20 include the World Bank, the IMF, the Organization for Economic Cooperation and Development (OECD), and the Financial Stability Board.<sup>21</sup> The role of the elected organizations, who are invitees of various areas of expertise, is to provide expertise and support to the group, where they are usually involved with the drafting of proposals, papers, and reports that are important to the Body.<sup>22</sup> The presidency position in G-20 rotates annually and is structured in a way to distribute regional balance over time.<sup>23</sup> The Member States of the G-20, excluding the European Union as it is not a single Member State, are placed into five different blocks with no more than four Member States per block.<sup>24</sup> The blocks are organized on a regional basis besides block 1 (Australia, Canada, the USA and Saudi Arabia) and block 2 (India, Russia, South Africa and Turkey) due to the lack of other regional Member States.<sup>25</sup> Each year a new Member State from a different group is selected to be president.<sup>26</sup> A part of this structure is the system of the troika, which is made up of the “current, immediate past, and next host” Member State.<sup>27</sup> The purpose of the troika is to ensure continuity within policy and agenda goals.<sup>28</sup>

Unlike other international organizations, the President of the G-20 is responsible for the organization and planning of the agenda, which is done with consideration and consultation of the other members and based on the current challenges the economy faces globally.<sup>29</sup> The summits are biannual and hosted and funded by the current G-20 President's Member State. Most recently, the presidency was represented by Japan, and they hosted the G-20 Osaka Summit in July 2019.<sup>30</sup> Saudi Arabia will host the next G-20 summit in Riyadh in 2020.<sup>31</sup>

While the forum of the G-20 was established to discuss the financial status of the world and economic based topics, the Summits of the past two decades have addressed a wide variety of issues including terrorism, the environment,

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<sup>15</sup> Nelson, Rebecca. "The G-20 and International Economic Cooperation: Background and Implications for Congress."

<sup>16</sup> Nelson, Rebecca. "The G-20 and International Economic Cooperation: Background and Implications for Congress."

<sup>17</sup> "G20: Members and Participants," Group of Twenty, [http://www.g20.org/Webs/G20/EN/G20/Participants/participants\\_en.html](http://www.g20.org/Webs/G20/EN/G20/Participants/participants_en.html) (Accessed June 14, 2019).

<sup>18</sup> "G20: Members and Participants," Group of Twenty.

<sup>19</sup> "G20: Members and Participants," Group of Twenty.

<sup>20</sup> "G20: Members and Participants," Group of Twenty.

<sup>21</sup> "Invitees and International Organizations," Global Summitry Project.

[http://globalsummitryproject.com.s197331.gridserver.com/archive/g20-2013\\_st\\_petersburg1/www.g20.org/docs/about/international\\_guests.html](http://globalsummitryproject.com.s197331.gridserver.com/archive/g20-2013_st_petersburg1/www.g20.org/docs/about/international_guests.html) (Accessed June 14, 2019).

<sup>22</sup> "G20: Invitees and International Organizations," G20 Russia. [http://en.g20russia.ru/docs/about/international\\_guests.html](http://en.g20russia.ru/docs/about/international_guests.html) (Accessed June 14, 2019).

<sup>23</sup> "G20 Members," G20 Turkey. <http://g20.org.tr/about-g20/g20-members/> (Accessed June 14, 2019).

<sup>24</sup> Nancy Alexander, Heike Löschmann, and Waleria Schuele. "The Rotating G20 Presidency: How Do Member Countries Take Turns?" Heinrich-Böll-Stiftung. November 30, 2016. <https://www.boell.de/en/2016/11/30/rotating-g20-presidency-how-do-member-countries-take-turns> (Accessed July 11, 2019).

<sup>25</sup> Nancy Alexander, Heike Löschmann, and Waleria Schuele. "The Rotating G20 Presidency: How Do Member Countries Take Turns?"

<sup>26</sup> Nancy Alexander, Heike Löschmann, and Waleria Schuele. "The Rotating G20 Presidency: How Do Member Countries Take Turns?"

<sup>27</sup> "G20 Members," G20 Turkey. <http://g20.org.tr/about-g20/g20-members/> (Accessed June 14, 2019).

<sup>28</sup> "G20 Members," G20 Turkey.

<sup>29</sup> "G20 Members," G20 Turkey.

<sup>30</sup> "What Is the G20 Summit? Summit Details." G20 Osaka Summit 2019. <https://g20.org/en/summit/about/#participants>. (Accessed June 14, 2019).

<sup>31</sup> "Saudi Arabia to Host G20 Summit Meetings in 2020." Al Arabiya English. December 1, 2018. <http://english.alarabiya.net/en/business/economy/2018/12/01/G20-communicate-looks-forward-to-next-meetings-in-Japan-2019-Saudi-Arabia-2020-.html>. (Accessed June 14, 2019).

and job creation, as they all directly impact the economy.<sup>32</sup> The achievements of the G-20 can be seen through their responses to the financial crisis of 2008-2009. The 2008-2009 summit also solidified a 47-point plan to address the prevention of financial crisis, while also concentrating on approaches to regulate and monitor the international financial market.<sup>33</sup> These methods included increasing the capital requirements for banks globally and the loss-absorption capacities of large banks to prevent the burden on taxpayers should the institution collapse.<sup>34</sup> In addition, the committee also recognized the importance of clean energy initiatives and sustainability as a pressing topic to discuss.<sup>35</sup> By having this informal and flexible political forum, the G-20 is able to discuss evolving issues and challenges associated with the global economy and international markets.<sup>36</sup>

The effectiveness of the G-20 has been discussed by many, as the summit does not have a way to enforce any decisions the group makes.<sup>37</sup> However, many notable resolutions have come from the summits. The London Summit of 2009 committed to the expansion of financial resources existing within the IMF by an additional \$850 billion dollars.<sup>38</sup> This was to be divided between “hard” improvements like facilities, as well as to “soft” improvements like loans and grants.<sup>39</sup> Multiple IMF policies and practices were changed, adapted, or augmented at this summit to include compensation, standards, credit rating agencies, and levels of regulation.<sup>40</sup> Further, the Seoul Summit of 2010 focused on declarations that officialized the positive attitudes and culture surrounding government leadership in the economic direction of Member States as opposed to a market-lead economy.<sup>41</sup> They also agreed that a liberal, market-oriented economy is required to lift oneself out of poverty and to improve the economic conditions and opportunities of a Member State’s citizenry.<sup>42</sup> These resolutions were able to come about due to the open forum structure of the G-20.

Under the leadership of Japanese Prime Minister Shinzō Abe for the recent G-20 Osaka Summit, the pillars for the G-20 agenda were based on eight main themes: Global Economy, Trade and Investment, Innovation, Environment and Energy, Employment, Women’s Empowerment, Development, and Health.<sup>43</sup> Additionally, as part of their duties, Japan chose to invite the Netherlands, Singapore, Spain, and Viet Nam to participate.<sup>44</sup> Other attendees included the African Union which was represented by Egypt, the Association of Southeast Asian Nations represented by Thailand, the Asia-Pacific Economic Cooperation represented by Chile, and the New Partnership for Africa’s Development represented by Senegal.<sup>45</sup>

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<sup>32</sup> "Agenda for the G20 Finance Ministers and Central Bank Governors Meeting," G20 Information Centre, University of Toronto. <http://www.g20.utoronto.ca/2008/2008agenda1107.html> (Accessed June 14, 2019).

<sup>33</sup> "Agenda for the G20 Finance Ministers and Central Bank Governors Meeting," G20 Information Centre.

<sup>34</sup> "Agenda for the G20 Finance Ministers and Central Bank Governors Meeting," G20 Information Centre.

<sup>35</sup> "Agenda for the G20 Finance Ministers and Central Bank Governors Meeting," G20 Information Centre.

<sup>36</sup> "Agenda for the G20 Finance Ministers and Central Bank Governors Meeting," G20 Information Centre.

<sup>37</sup> Nancy Alexander, Heike Löschmann, and Waleria Schuele. "The Rotating G20 Presidency: How Do Member Countries Take Turns?"

<sup>38</sup> "Declaration on Delivering Resources Through the International Financial Institutions." Ministry of Foreign Affairs Japan. April 2, 2009, [https://www.mofa.go.jp/policy/economy/g20\\_summit/2009-1/annex1.html](https://www.mofa.go.jp/policy/economy/g20_summit/2009-1/annex1.html) (Accessed July 10, 2019).

<sup>39</sup> "Declaration on Delivering Resources Through the International Financial Institutions." Ministry of Foreign Affairs Japan.

<sup>40</sup> "Declaration on Delivering Resources Through the International Financial Institutions." Ministry of Foreign Affairs Japan.

<sup>41</sup> "Seoul Development Consensus for Shared Growth." Ministry of Foreign Affairs Japan. 2010.

[https://www.mofa.go.jp/policy/economy/g20\\_summit/2010-2/annex1.pdf](https://www.mofa.go.jp/policy/economy/g20_summit/2010-2/annex1.pdf). (Accessed July 10, 2019).

<sup>42</sup> "Seoul Development Consensus for Shared Growth." Ministry of Foreign Affairs Japan.

<sup>43</sup> "Main Themes | Summit Details." G20 Osaka Summit 2019. <https://g20.org/en/summit/theme/> (Accessed June 14, 2019).

<sup>44</sup> "What Is the G20 Summit? | Summit Details." G20 Osaka Summit 2019. <https://g20.org/en/summit/about/#participants>. (Accessed June 14, 2019).

<sup>45</sup> "What Is the G20 Summit? | Summit Details." G20 Osaka Summit 2019.

## I. Exploring the Use of Automation within Advanced and Emerging Economies

### *Introduction*

Automation has been a significant driving force behind economic growth since the Industrial Revolution of the early 19<sup>th</sup> Century. Automation has been a force for shifting job markets, creating and eliminating jobs across communities, and changing the very face of our societies. It is estimated that at our current technological standpoint, two-thirds of the jobs in developing Member States could be automated, bringing prosperity and productiveness, but also disruption.<sup>46</sup>

There are many forms of automation. However, for the purposes of this document, automation will be defined broadly as the use or introduction of automatic equipment in a manufacturing or other process or facility.<sup>47</sup> Further, a particularly critical form of automation, known as artificial intelligence, will be defined to mean computer systems that learn from the actions of humans and apply these learnings to better assist and support human decision making.<sup>48</sup>

Adapting to automation will be a challenge for all, but especially developing economies which must make sure they can compete in a system where computers will define the pace of change.<sup>49</sup> It is estimated that at our current technological standpoint, two-thirds of the jobs in developing Member States could be automated, bringing prosperity and productiveness, but also disruption.<sup>50</sup> The most prevalent job sectors in these Member States, such as manufacturing, farming, and mining, are easier to automate and therefore far more susceptible to automation.<sup>51</sup>

Advanced economies are also impacted by automation. In advanced economies, job creation is driven by technological innovation and fierce competition between businesses and entrepreneurs from all over the world, especially in cutting edge fields such as artificial intelligence, and in highly-technological Member States such as Japan, the United States of America (USA), and The People's Republic of China. In fact, it is estimated that by 2030, the global GDP will have increased by 14 percent, or USD 15.7 trillion, as a result of utilization of artificial intelligence, demonstrating the significant role of automation in the economy.<sup>52</sup> Measures similar to those needed in developing economies, such as political, social, and educational policy reform, and investment, are also needed in advanced economies, that takes into account current systems of taxation, research, and capital, and the applicability (or inapplicability) of these policies for globalized use.

The G-20, in its role of producing sustainable and profitable economic infrastructure, places significant importance on the consideration of automation.<sup>53</sup> The organization sees automation as an area of opportunity for developing and developed economies alike, with the potential to create more jobs, increase the drive for education, and close the gap on gender inequality.<sup>54</sup> However, if handled incorrectly, automation also has the potential to stifle economic investment, stagnated wages, and reduced investment.<sup>55</sup> But to explore the use of automation and its potential impact on economies, it is essential to understand the underlying effects automation can have on advanced and emerging economies. The vast effects of automation can already be seen across the globe, affecting societies, wages, jobs, and

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<sup>46</sup> "The Changing Nature of Work." World Bank, <http://documents.worldbank.org/curated/en/816281518818814423/2019-WDR-Report.pdf> (Accessed January 13, 2020).

<sup>47</sup> Gerard Verweij, A. R. (2017). *Sizing the prize*. Retrieved from PwC website: <https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf> (Accessed January 13, 2020).

<sup>48</sup> Gerard Verweij, A. R. (2017). *Sizing the prize*.

<sup>49</sup> "The Changing Nature of Work." World Bank.

<sup>50</sup> "The Changing Nature of Work." World Bank.

<sup>51</sup> Lukas Schlogl and Andy Sumner. "The Rise of the Robot Reserve Army: Automation and the Future of Economic Development, Work, and Wages in Developing Countries," July 2, 2018. doi:10.2139/ssrn.3208816.

<sup>52</sup> Gerard Verweij, A. R. (2017). *Sizing the prize*.

<sup>53</sup> Moira Fagan and Richard Wike, "Key global views about issues and leaders in the spotlight at the 2018 G20 summit," Pew Research, November 28, 2018. <https://www.pewresearch.org/fact-tank/2018/11/28/key-global-views-about-issues-and-leaders-in-the-spotlight-at-the-g20-summit/>. (Accessed January 13, 2020).

<sup>54</sup> "Future of Work and Skills," OECD, February 11, 2017. [https://www.oecd.org/els/emp/wcms\\_556984.pdf](https://www.oecd.org/els/emp/wcms_556984.pdf) (Accessed January 13, 2020).

<sup>55</sup> "Future of Work and Skills," OECD.

technological advancement. These effects, negative or positive, are guided by policymakers and economists who work address these problems and create new opportunities.

The main challenge of exploring automation is understanding where investment should be targeted to allow both advanced and emerging economies to benefit. Key to overcoming this challenge is an understanding of how automation is likely to manifest in such economies, and thus where investment should lie. Additionally, one essential piece of overcoming the challenge is investment in human capital, summarized as investment in people's knowledge and skills, which can be accomplished by investing in many key sectors of public life, such as education and workforce development, and foreign direct investment into both businesses and entrepreneurs. With adequate investment into human capital, as well as an understanding of financial and research investment, automation and artificial intelligence have the capability to fundamentally transform local, regional, and the global economy.

### ***History of Automation***

When the automation is used today, one tends to think of robots or artificial intelligence. However, automation began long before computers were even a thought, as a process of automating industrial work.<sup>56</sup> The process of automation began during the Industrial Revolution in the United Kingdom in the mid-18<sup>th</sup> Century. The Industrial Revolution brought together several important developments in manufacturing, materials, energy, and the organization of labor, resulting in significant improvements in the process of doing work.<sup>57</sup> The earliest forms of automation can be seen in machines such as the Spinning Jenny and the powered loom, which automated time-consuming jobs like spinning yarn and weaving.<sup>58</sup> This, combined with a new type of factory system, communication, and transportation, led to mass production, which many still see as the chief byproduct of early automation.<sup>59</sup>

Automation was adopted by many industrial sectors, such as mining and coal production, throughout the late 19<sup>th</sup> and early 20<sup>th</sup> Centuries.<sup>60</sup> However, World War II sparked automation at the mass level and across the globe, spurring the assembly line and automation of automobiles, tanks, and weapons.<sup>61</sup> The significant focus on automation of war-time necessities like fighter airplanes and war ships promoted a deeper investment and interest in automation generally, a phenomenon that continued after the war.<sup>62</sup>

While the advancement of industrial automation continued to flourish throughout the Second Industrial Revolution, the concept of robots and artificial intelligence took much longer to spread across the globe. The first physical robot, designed by USA company Westinghouse Electric and named Elektro, was presented at the World Fair in 1939.<sup>63</sup> Following the close of World War II and the end of the Great Depression, the World Fair was seen as a beacon of hope for the days of tomorrow; Elektro personified that hope.<sup>64</sup> With his ability to participate in conversation, smoke, walk, blow up balloons, and more, Elektro put on a show while demonstrating the incredible potential of the future of automation.<sup>65</sup>

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<sup>56</sup> "The History of Automation: The Rise of Robots and AI," Think Automation, <https://www.thinkautomation.com/bots-and-ai/a-history-of-automation-the-rise-of-robots-and-ai/> (Accessed January 13, 2020).

<sup>57</sup> "The Industrial Revolution," Encyclopedia Britannica, <https://www.britannica.com/event/Industrial-Revolution> (Accessed January 13, 2020).

<sup>58</sup> "Learning Timelines: Sources from History," British Library, <https://www.bl.uk/learning/timeline/item107855.html> (Accessed January 6, 2020).

<sup>59</sup> White, D. M. (2009). *The Industrial Revolution*. Retrieved from <https://www.bl.uk/georgian-britain/articles/the-industrial-revolution>

<sup>60</sup> "A Brief History of Automation," Product Handling Concepts, September 7, 2016. <https://www.phcfirst.com/words-in-motion/2016/9/7/a-brief-history-of-automation> (Accessed January 13, 2020).

<sup>61</sup> "A Brief History of Automation," Product Handling Concepts.

<sup>62</sup> "A Brief History of Automation," Product Handling Concepts.

<sup>63</sup> "A Smoking Robot Ruled the 1939 World's Fair," History, <https://www.history.com/news/1939-worlds-fair-new-york-technology-robot-flashback> (Accessed January 13, 2020).

<sup>64</sup> "A Smoking Robot Ruled the 1939 World's Fair," History.

<sup>65</sup> "A Smoking Robot Ruled the 1939 World's Fair," History.

William Grey Walter took the automation demonstrated by Elektro one step further in 1948 with the development of the world's first artificial intelligence systems, two tortoises known as Elmer and Elsie.<sup>66</sup> The robots used sensors of light and touch to learn their way around, leading to significant investment in the area of self-learning robots and computerized systems.<sup>67</sup>

As a result of the initiatives of the 20<sup>th</sup> Century, automation has been studied by the international community in both advanced and emerging economies since the early 2000s. Among the first major organizations to investigate the process was the World Bank (WB). In an effort to better understand and advise regarding automation, the WB has performed in-depth research and analysis of automation, and how it will affect jobs. This research shows that, for developing Member States, automation can lead to a significant increase in productivity by allowing lower-skilled workers the opportunity to train on new systems of production and learn new skills, which leads to new opportunities for employment.<sup>68</sup> In fact, the World Bank estimated that between 1999 and 2016 a net of 23 million jobs were created by the automation of routine labor.<sup>69</sup> Furthermore, as workers receive continued training, the ability and drive to invest in formal education also increases, allowing for better social mobility and prospects for many, particularly in emerging economies.<sup>70</sup>

### *Challenges of Automation*

According to the Center for Global Development, one of the most valuable results of automation is the fact that it facilitates a move into the manufacturing and service sectors for many developing economies.<sup>71</sup> However, automation can also create a “middle income trap” for some emerging economies, where Member States may become stuck in a period of stagnated economic improvement in a phase between being an emerging economy and an advanced economy.<sup>72,73</sup> This is an important idea to understand as many emerging economies, to successfully profit from automation, must avoid the middle income trap by investing heavily into human capital and ensure that adequate policies are put into place to encourage the continued growth of per capita income rates.

As software is developed that can help companies locate sources of materials or skills more easily, they will help bring in value for all types of economies as workers are more effectively connected to jobs.<sup>74</sup> However, automation could also create the risk of “reshoring,” where advanced economies move production out of developing economies and into economically advanced Member States as automation makes production cheaper and easier.<sup>75</sup> This creates the potential for stagnation of emerging economies, as advanced economies relocate significant sources of workforce development and employment.

Further, a majority of Member States are currently unprepared for the change and challenge that automation will bring, and also lack the capacity to make the most of its benefits. This is due to the underinvestment in human capital and infrastructure that many Member States face.<sup>76</sup> Neglecting investment in education, training, and

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<sup>66</sup> “The History of Automation: The Rise of Robots and AI,” Think Automation, <https://www.thinkautomation.com/bots-and-ai/a-history-of-automation-the-rise-of-robots-and-ai/> (Accessed January 13, 2020).

<sup>67</sup> “The History of Automation: The Rise of Robots and AI.”

<sup>68</sup> “The Changing Nature of Work,” The World Bank, 2019. <http://documents.worldbank.org/curated/en/816281518818814423/2019-WDR-Report.pdf> (Accessed January 13, 2020).

<sup>69</sup> “The Changing Nature Of Work.” World Bank.

<sup>70</sup> “The Changing Nature of Work,” The World Bank, 2019.

<sup>71</sup> Lukas Schlogl and Andy Sumner. “The Rise of the Robot Reserve Army: Automation and the Future of Economic Development, Work, and Wages in Developing Countries,”

<sup>72</sup> Lukas Schlogl and Andy Sumner. “The Rise of the Robot Reserve Army: Automation and the Future of Economic Development, Work, and Wages in Developing Countries,”

<sup>73</sup> “Middle-Income Traps,” World Bank Research Digest, [http://siteresources.worldbank.org/DEC/Resources/84797-1154354760266/2807421-1382041458393/9369443-1382041470701/Middle-Income\\_Traps.pdf](http://siteresources.worldbank.org/DEC/Resources/84797-1154354760266/2807421-1382041458393/9369443-1382041470701/Middle-Income_Traps.pdf) (Accessed January 13, 2020).

<sup>74</sup> “The Changing Nature Of Work.” World Bank

<sup>75</sup> “The Changing Nature Of Work.” World Bank

<sup>76</sup> “The Human Capital Project.” The World Bank, October 11, 2018. <https://openknowledge.worldbank.org/bitstream/handle/10986/30498/33252.pdf?sequence=5&isAllowed=y> (Accessed January 13, 2020).

healthcare, can lead to a significant increase the gap between automated jobs and those equipped to perform the new opportunities automation creates, ultimately causing economic downturn.<sup>77</sup> Investment in people, particularly in skills such as problem solving and critical thinking, helps to better prepare an economy for automation, yet many emerging economies and even advanced economies do not acknowledge this necessity.<sup>78</sup>

The United Nations, through its Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals (STI Forum) has also explored the difficulties of digitalization.<sup>79</sup> With over half of the world's population still lacking affordable access to the internet, automation could exacerbate the gap between developing and developed economies.<sup>80</sup> Automation can only be used for progress if everyone is able to access its benefits.<sup>81</sup> Having affordable digital connections is the only way that developing Member States can make sure that they can utilize automated technologies. As the United Nations Commission on Trade and Development stated in Resolution TD/B/C.I/MEM.8/5, automation can only work with the processing of huge amounts of data.<sup>82</sup> Without affordable digital connections and internet data, new digital technologies cannot be harnessed.<sup>83</sup>

### *Current Situation and Initiatives*

In the age of globalization, jobs have been revolutionized by the ability to connect and work with people on the opposite side of the globe.<sup>84</sup> A key example of the impact of automation, digitalization, and globalization is the rise of international companies such as Apple and Google, which leverage globalized networks of both skill, manufacturing capabilities, and economic advantages to create new products. Apple utilized machines to automate data processing about competing supply chains, creating the best one for each of their products and further, each part of the manufacturing process. But these advancements can be seen not only in technologically advanced Member States, but also developing Member States such as in Ghana, where a network connecting farms helps automatically collect data, allowing stakeholders to be better informed of the agricultural situation of crop success and failure, thus managing and mitigating risk.<sup>85</sup>

According to the McKinsey Global Institute workforce skill model, which looks at changes in skill productivity and requirements in labor markets, over the next 30 years jobs utilizing skills related to digitalization and automation will be far more prevalent; The Model estimates that the number of jobs requiring technological skills will increase by 60 percent, compared with an 11 percent drop in the amount of physical and manual skilled jobs.<sup>86</sup> Overall, this model highlights how automation impacts the skills required to successfully maintain a job, and disrupts the job market for those jobs that will not require technological skills.<sup>87</sup>

To create a successful environment for people to adapt to the changes automation brings, Member States must help ensure labor mobility alongside protections for workers. Investing in education and creating social safety net

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<sup>77</sup> "The Changing Nature Of Work." World Bank.

<sup>78</sup> "The Changing Nature Of Work." World Bank.

<sup>79</sup> "The Age of Digital Interdependence." UN Secretary-General's High-level Panel on Digital Cooperation, n.d. <https://sustainabledevelopment.un.org/content/documents/23351DigitalCooperationreportforweb.pdf>. (Accessed January 13, 2020),

<sup>80</sup> "The Age of Digital Interdependence." UN Secretary-General's High-level Panel on Digital Cooperation.

<sup>81</sup> "The Age of Digital Interdependence." UN Secretary-General's High-level Panel on Digital Cooperation.

<sup>82</sup> "Adapting Industrial Policies to a Digital World for Economic Diversification and Structural Transformation." United Nations Conference on Trade and Development, February 12, 2018. [https://unctad.org/meetings/en/SessionalDocuments/cimem8d5\\_en.pdf](https://unctad.org/meetings/en/SessionalDocuments/cimem8d5_en.pdf) (Accessed January 13, 2020),

<sup>83</sup> "Adapting Industrial Policies to a Digital World for Economic Diversification and Structural Transformation." United Nations Conference on Trade and Development.

<sup>84</sup> "The Changing Nature Of Work." World Bank

<sup>85</sup> "The Changing Nature Of Work." World Bank

<sup>86</sup> Jacques Bughin, Eric Hazan, Susan Lund, Peter Dahlström, Anna Wiesinger, Amresh Subramaniam. (2018). *Skill Shift Automation And The Future Of The Workforce*. Retrieved from McKinsey Global Institute website: <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Future%20of%20Organizations/Skill%20shift%20Automation%20and%20the%20future%20of%20the%20workforce/MGI-Skill-Shift-Automation-and-future-of-the-workforce-May-2018.ashx> (Accessed January 13, 2020).

<sup>87</sup> Jacques Bughin, Eric Hazan, Susan Lund, Peter Dahlström, Anna Wiesinger, Amresh Subramaniam. (2018). *Skill Shift Automation And The Future Of The Workforce*.



policies provide workers with financial and social security in case of disruptive technologies forcing them to find new jobs. The International Labour Organization, mandated to study these effects on labor, has noted a recent decline in labor mobility (meaning the degree to which people are able and willing to move from one job to another or from one area to another in order to work), driven by difficulties in finding work related to experience.<sup>88 89</sup> The primary conclusion of the ILOs research on labor mobility is that fluidity in the labor market between occupations must be maintained to promote utilization of new technologies whilst also promoting equal economic opportunities and reducing inequality across classes and genders.<sup>90 91</sup>

In an effort to mitigate the negative impacts of automation on emerging economies and increase investment into education and social programs, the WB has developed the Human Capital Index, which evaluates the negative economic impacts of neglecting investment in human capital.<sup>92</sup> Further, the Index offers Member States a guide to investment in human capital, illustrating the clear benefits of investment in education, training, and healthcare.<sup>93</sup> Through the Human Capital Index, the World Bank is helping many Member States identify barriers to human capital development and how to tackle them with a “whole of government” approach, meaning a sustained approach that will last election cycles.<sup>94</sup> By allowing Member States to review where government policies need further improvement to maximize the economic value and wellbeing of their workers, it also assists Member States in quantifying how much routine work can be automated and illustrates where further investment in human capital is needed.<sup>95</sup> Furthermore, it highlights many “Human Capital Champions” who invest heavily in human capital efficiently and productively, such as Singapore.<sup>96</sup> Singapore, as a Human Capital Champion, highlights the strong workforce investment Member States can make that can drive economic growth, especially when they lack the resource of materials that drive economic growth in many other, larger, Member States.

At the 2018 G-20 Summit in Argentina, the G-20 declared the need for “building consensus for fair and sustainable development” and created a report governmental adaptation to the future of work and ways to improve economies to work with automation.<sup>97</sup> This report also endorsed a list of policy options revolving around specific issues that governments should tackle to better adapt to and make the most of automation.<sup>98</sup> These policy recommendations were created to spur the benefits of automation whilst tackling the problems it also brings.<sup>99</sup> They also highlight the current situation and lack of policies of any given Member State, which can lead to solutions that promote success of automation in both advanced and emerging economies.<sup>100</sup> The recommendations are split into four major sections: “harness the benefits of technology for growth and productivity; support people during transitions and address distributional challenges; secure sustainable tax systems; and ensure the best possible evidence to inform decision-making.” Each of these sections contains policy recommendations which can be applied, with minor adaptations, by Member States across the globe.<sup>101</sup>

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<sup>88</sup> Cambridge English Dictionary. (n.d.). Retrieved January 3, 2020, from

<https://dictionary.cambridge.org/dictionary/english/labour-mobility> (Accessed January 13, 2020).

<sup>89</sup> “ILO Research Paper Series: The economics of artificial intelligence: Implications for the future of work,” Found at [https://www.ilo.org/global/topics/future-of-work/publications/research-papers/WCMS\\_647306/lang--en/index.htm](https://www.ilo.org/global/topics/future-of-work/publications/research-papers/WCMS_647306/lang--en/index.htm) (Accessed January 13, 2020).

<sup>90</sup> “ILO Research Paper Series: The economics of artificial intelligence: Implications for the future of work.”

<sup>91</sup> “G20 Menu of Policy Options for the Future of Work.” G20 Framework Working Group

<sup>92</sup> “The Changing Nature Of Work.” World Bank.

<sup>93</sup> Kavita Watsa and Jason Weaver, “Happy Birthday to the Human Capital Index: Looking back and moving forward,” December 4, 2019. <https://blogs.worldbank.org/voices/happy-birthday-human-capital-index-looking-back-and-moving-forward> (Accessed January 13, 2020).

<sup>94</sup> “The Human Capital Project.” The World Bank, <https://www.worldbank.org/en/publication/human-capital/brief/about-hcp> (Accessed January 13, 2020).

<sup>95</sup> “The Human Capital Project.” The World Bank

<sup>96</sup> The Human Capital Project.” The World Bank,

<sup>97</sup> “G20 Leaders’ Declaration Building Consensus for Fair and Sustainable Development.” G-20, 2018. [http://docs.dpaq.de/14219-buenos\\_aires\\_leaders\\_declaration.pdf](http://docs.dpaq.de/14219-buenos_aires_leaders_declaration.pdf) (Accessed January 13, 2020).

<sup>98</sup> “G20 Leaders’ Declaration Building Consensus for Fair and Sustainable Development.” G-20.

<sup>99</sup> “G20 Menu of Policy Options for the Future of Work.” G20 Framework Working Group, [http://www.oecd.org/g20/g20\\_menu\\_of\\_policy\\_options\\_for\\_the\\_future\\_of\\_work\\_fwg-executive\\_summary.pdf](http://www.oecd.org/g20/g20_menu_of_policy_options_for_the_future_of_work_fwg-executive_summary.pdf) (Accessed January 13, 2020).

<sup>100</sup> “G20 Menu of Policy Options for the Future of Work.” G20 Framework Working Group.

<sup>101</sup> G20 Menu of Policy Options for the Future of Work.” G20 Framework Working Group.

The lack of competition in many Member States is a hindrance for automation and innovation, allowing for large companies to dominate the market.<sup>102</sup> This lack of competition is a result of the relatively small amount of companies within Member States which can compete technologically or productively with multinational corporations.<sup>103</sup> In their report, the G-20 also notes that any policy action should be combined with an increase in investment in research and development, along with practices to increase infrastructure and human capital.<sup>104</sup> Investment in these fields is fundamental to unlocking the potential of automation in any economy. Companies themselves will be unable to properly exploit new technologies and be more competitive without research and development at the forefront of investment plans, and with strong infrastructure and human knowledge and skills behind it.

However, when considering investing in human and economic development, a Member State must also consider the policies that accompany these changes. One of the most significant barriers to adapting to automation is the challenge it brings regarding current systems of taxation.<sup>105</sup> As automation increases, so does the ability of companies to increase and decrease labor forces more rapidly, as well as that to move money and make or suspend investments faster than ever before.<sup>106</sup> This new level of corporate mobility requires the improvement, or even creation, of systems of taxation to better leverage technology and make revenue systems less vulnerable to disruptions in globalization.<sup>107</sup> This may require the installation or implementation of new technologies that can make tax paying simpler and increase compliance for both citizens and companies.<sup>108</sup> Further, the G-20 recommends broadening the tax base, focusing on progressive on multinational companies, reducing tax loopholes, and reducing differences in effective tax rates, especially for investment.<sup>109</sup> Overall, studies have found that multinational enterprises, through the shifting of their mobile capital, shift up to 37% of their profits. If this is included with other shifting of corporate capital, almost €125 billion is lost in tax revenue per year globally.<sup>110</sup> The scale of these losses, especially for emerging economies, can be tackled with better automated tax systems. For example, in 2003, Georgia revolutionized its taxation and revenue systems by introducing electronic tax returns, therefore reducing corruption and increasing tax revenue significantly.<sup>111</sup> Overall, this doubled Georgia's tax revenue by 2008.<sup>112</sup>

## Case Studies

### Malaysia

Malaysia is an example of a developing Member State that is harnessing the power of automation to the benefit of the economy. In 2010, Malaysia established Vision 2020, a plan to continually improve education, health, and quality of life of Malaysian citizens with the ultimate goal of attaining the ability to compete in the global economy.<sup>113</sup> Part of Vision 2020 was the Economic Transformation Programme (ETP), which includes policy recommendations and strategic recommendations to achieve its goals.<sup>114</sup> The ETP led to significant investment in projects to bolster the economy, which include increasing the utilization of automation and, as a result, enhancing the quality of machinery used in the construction sector.<sup>115</sup> The automation of production of materials utilized at

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<sup>102</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>103</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>104</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>105</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>106</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>107</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>108</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>109</sup> "G20 Menu of Policy Options for the Future of Work." G20 Framework Working Group.

<sup>110</sup> Janský, P., & Palanský, M. (2019). Estimating the scale of profit shifting and tax revenue losses related to foreign direct investment. *International Tax and Public Finance*, 26(5), 1048–1103.

<sup>111</sup> Akitoby, (2018, March 1). Improving Tax Collection, Raising Tax Revenue and Lessons in Tax Reform - IMF F&D Magazine. <https://www.imf.org/external/pubs/ft/fandd/2018/03/akitoby.htm> (Accessed January 3, 2020).

<sup>112</sup> Akitoby, B. (2018, March 1). Improving Tax Collection, Raising Tax Revenue and Lessons in Tax Reform.

<sup>113</sup> "Economic Transformation Programme: A Roadmap for Malaysia," Asia Pacific Energy, <https://policy.asiapacificenergy.org/sites/default/files/ETP.pdf> (Accessed January 13, 2020).

<sup>114</sup> "Economic Transformation Programme: A Roadmap for Malaysia," Asia Pacific Energy.

<sup>115</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia," July 2012.

construction sites led to reduced physical labor, cleaner and neater sites, faster project completion, and ultimately enhanced the quality of the finished products.<sup>116</sup>

Investment by the Malaysian government in automation of the construction sector has promoted adaptation throughout the private sector as well, leading to more efficient construction.<sup>117</sup> Prior to automation, the construction sector faced many issues, but the most significant was that of a labor shortage; the utilization of automation helped the sector to maintain productivity.<sup>118</sup> Whilst this concept has been used in more high-tech Member States such as Japan, Malaysia's use of these ideas highlights how developing Member States can also reap the benefits of automation with almost half of construction companies utilizing automated technologies in their construction projects.<sup>119</sup> However, embracing these technologies has been difficult due to high barriers for financial commitments, low acceptance from machine workers, low machine literacy rate, and incompatibility.<sup>120</sup> Yet Malaysia has adapted to automation in a broad range of related industries, such as engineering and other specialized areas of construction, giving Malaysia a head start in modern industrialization<sup>121</sup>

### *Botswana*

In Botswana, investment in automation directly resulted in improved education, as libraries are utilizing automation to improve their services.<sup>122</sup> As one of the largest institutions in Sub-Saharan Africa, the University of Botswana began initiating automation projects in the 1990s, after successful automation of libraries in Nigeria.<sup>123</sup> While computerization was already in process, automation allows for the more complex services of a librarian, such as searching, text analysis, and case-matching, to be automated and readily available for students. It also allows for the connection of library databases to others across the world, which improves the level of access for intended users, especially African scholars abroad.<sup>124</sup> The process of automation took extensive consultation, and after training library staff and other university staff, the library automation has allowed for the delivery of electronic information all across the continent.<sup>125</sup> It has enhanced the role of librarians and faculties, as well as improved the academic status of the University. Furthermore, job security fears were mitigated with the creation of subject librarians and specialization of skills, mirroring the recommendations by the G-20 and WB.<sup>126</sup>

### *Japan*

Additionally, Japan is a popular case study for the successes of automation. Japan was already a leader in automation and robotics, with almost five-seventh's of the world's industrial robots being used in Japan in 1995 (500,000 in total).<sup>127</sup> However, due to its rapid decrease of population and lack of immigration in recent years, automation is quickly taking over various sectors of the labor market to allow Japanese manufacturing and industries

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[https://www.researchgate.net/publication/273886702\\_Readiness\\_of\\_A\\_Developing\\_Nation\\_in\\_Implementing\\_Automation\\_and\\_Robotics\\_in\\_Construction\\_A\\_Case\\_Study\\_of\\_Malaysia](https://www.researchgate.net/publication/273886702_Readiness_of_A_Developing_Nation_in_Implementing_Automation_and_Robotics_in_Construction_A_Case_Study_of_Malaysia) (Accessed January 13, 2020).

<sup>116</sup> Sara Latif Qureshi and Asiah Abdul Rahim, "A Review Of IBS Implementation In Malaysia And Singapore," Planning Malaysia, 2018. <https://www.planningmalaysia.org/index.php/pmj/article/view/486> (Accessed January 13, 2020).

<sup>117</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia."

<sup>118</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia."

<sup>119</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia."

<sup>120</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia."

<sup>121</sup> Rohana Mahbub, "Readiness of A Developing Nation in Implementing Automation and Robotics in Construction: A Case Study of Malaysia."

<sup>122</sup> Stephen, (2012). Library automation in sub Saharan Africa: case study of the University of Botswana. *Rossiiskaya Akademiya Nauk. Programirovanie*, 46(3), 292–307.

<sup>123</sup> Stephen, M. M. (2012). Library automation in sub Saharan Africa: case study of the University of Botswana

<sup>124</sup> Stephen, M. M. (2012). Library automation in sub Saharan Africa: case study of the University of Botswana

<sup>125</sup> Stephen, M. M. (2012). Library automation in sub Saharan Africa: case study of the University of Botswana

<sup>126</sup> Stephen, M. M. (2012). Library automation in sub Saharan Africa: case study of the University of Botswana

<sup>127</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots" in FINANCE & DEVELOPMENT, JUNE 2018, VOL. 55, NO. 2, found at <https://www.imf.org/external/pubs/ft/fandd/2018/06/japan-labor-force-artificial-intelligence-and-robots/schneider.htm> (Accessed January 13, 2020).

to keep up in the competitive world.<sup>128</sup> The gap in productivity between manufacturing (such as semiconductors and cars) and services (such as finance) is wide, and the services sector is learning from the manufacturing sector how productivity can increase through automation.<sup>129</sup> AI and robotics have started to help, with examples in health care, transportation, shops, even hotels and restaurants, where robots have started to be staff or chefs.<sup>130</sup> Evidence has shown that this has produced a net benefit to Japan, despite fears that it pushed people out of jobs.<sup>131</sup> Japan's example is key for how advanced economies can adapt to automation. While it is true that Japan still faces societal challenges in its labor markets that could be exacerbated by automation, such as a small female labor force, its policies and labor force dynamics are a shining example of automation in the newest wave of technological development.<sup>132</sup>

### *Conclusion*

Automation is an opportunity for all economies, governments, and businesses, but a lot of work still needs to be done, including creation of government policies and investment in infrastructure, before it can be properly harnessed. Properly prepared for, automation can bring significant increases in living standards, growth, and happiness in many Member States. Improperly prepared for, it can create risks of inequality, wage stagnation, and increasing frustration in a fast-paced global economy that has already left some behind.

However, the policy options are vast, and more research is needed. Firstly, investment in human capital is a priority. Education, from the ground up, must be improved all over the world, with all economies promoting specialization and the learning of new skills. Complementing this must be robust social protection that helps people to both find new jobs and be comfortable risking the process of beginning a new career. Next, investment in infrastructure is necessary before automation can be harnessed. In physical and digital sectors, investment is needed to keep people connected, and businesses successful and competitive. As agricultural and routine work could be automated, a connected economy and society is needed to help share the productivity it can bring. Lastly, regulation on companies and taxation needs to be robust to allow for the increased productivity to be taxable and fair. With competition naturally increasing as the speed of technological change does, there needs to be an impetus to allow start-ups to flourish, whilst dissuading monopolization.

### *Committee Directive*

The G-20's approach to automation is to build on what we have already achieved. The organization worked to create policy options and ideas in 2018 that can be transformed into actionable and functioning projects across the G-20 and beyond. Furthermore, while some communities have begun to adapt successfully, others have either not begun the process at all, or have become trapped in their attempts. Delegates must address the deepening dissatisfaction with globalization and the rising levels of inequality while addressing the challenges of globalization. How can the G-20 cooperate to harness the benefits of automation while minimizing the negative consequences? How can legislation and policymaking keep up with the rapid changes in technology? How can Member States incentivize their citizens to embrace these changes throughout? How can education be strengthened in both emerging and advanced economies to promote advancement in automation? What forms of social protection should be prioritized to improve labor mobility?

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<sup>128</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots," <https://www.coursehero.com/file/p52uqr4/This-technology-can-be-influenced-and-controlled-while-not-being-able-to-have/> (Accessed January 13, 2020).

<sup>129</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots."

<sup>130</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots."

<sup>131</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots."

<sup>132</sup> Schneider T, Hong G H, Le A V, "Land of the Rising Robots."

## II. Enhancing Guidelines on Sustainable Finance Operations

*“...[W]e can waste the planet’s resources for a few decades more...we must realize that one day the storm will break on the heads of future generations. For them it will be too late.” – UN Secretary General Boutros-Ghali, UNCED, 1992*

### **Introduction**

Financial operations are one of the most important components of a Member State or organization, however there is a lack of sustainable finance operations. The term “sustainable finance” is defined as “any form of financial service integrating environmental, social, and governance (ESG) criteria into the business or investment decisions for the lasting benefit of both clients and society at large.”<sup>133</sup> Examples of sustainable finance include “sustainable funds, green bonds, impact investing, microfinance, active ownership, credits for sustainable projects and development of the whole financial system in a more sustainable way.”<sup>134</sup> Many individual Member States and companies are revamping their financial operations to become more green and sustainable, however there are still barriers to entry for many developing Member States and smaller companies that must be addressed.

Generally, for an organization, finance operations are defined as “all operations between two institutional units and relating to financial assets and liabilities.”<sup>135</sup> Some of these operations are purely financial such as loans and issue or disposal of securities, while others are more operational by addressing goods and services or distributive transactions, leading the transfer of payment means or credits. Some of the main components for financial operations and planning include banking, planning, disclosure, compliance and record keeping, and budgeting. Financial operations have a direct impact on every part of an organization and every member of the community and require professional management to build better organizations and institutions. This is even more vital when dealing with the financial planning of an entire Member State, yet there are not sustainable finance operations in many Member States.

### **Topic History**

In past decades, the topic of sustainability has not been at the top of the agenda for many in the finance world. There were socially-responsible investors, such as those from religious or philanthropic organizations, but one of the first occurrences of sustainable finance operations took place in the 1960s, and continued onwards as the mutual fund industry in the United States of America expanded rapidly.<sup>136</sup> However, this was still a small portion of the investing community. The same thing was happening in corporations; as capital markets continued to grow and governance improved in many companies in the 80s and 90s, social and environmental issues were overlooked.<sup>137</sup>

The modern day economic and political environment has been reshaped due to the 2008 financial crisis, and as a result, attitudes have greatly shifted in regards to the world’s ESG challenges.<sup>138</sup> One example is how, in many Member States across the globe, the public has called for action on plastic pollution and has resulted in the banning or taxing of single-use plastics.<sup>139</sup> As these attitudes continue to shift among both policymakers and the general public, the finance sector has responded accordingly. Sustainable finance is now a trending topic for banks, investors, and corporations around the globe, and is now progressively sophisticated with the creation of new initiatives, frameworks, and financial products. The evolution of sustainable finance has been incremental, but a handful of events highlight how sustainability has progressed towards the mainstream.

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<sup>133</sup> “What Is Sustainable Finance.” Swiss Sustainable Finance. <https://www.sustainablefinance.ch/en/what-is-sustainable-finance-content---1--1055.html>. (Accessed October 10, 2019).

<sup>134</sup> “What Is Sustainable Finance.” Swiss Sustainable Finance.

<sup>135</sup> “Financial Operations.” Insee. <https://www.insee.fr/en/metadonnees/definition/c1217> (Accessed January 5, 2020).

<sup>136</sup> Cooper, Simon. “The Evolution of Sustainable Finance.” Standard Chartered, February 5, 2019.

<https://www.sc.com/en/feature/the-evolution-of-sustainable-finance/> (Accessed January 13, 2020).

<sup>137</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>138</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>139</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

The United Nations (UN) Millennium Development Goals (MDGs) in 2000 were created by all of the UN Member States and prominent development institutions.<sup>140</sup> The MDGs raised awareness and provided a framework for the finance sector to understand its impact on sustainability, as well as defining the term “sustainability” to including economic, social, and environmental objectives.<sup>141</sup> The MDGs directly led to the creation of the 2015 UN Sustainable Development Goals (SDGs), which are a more comprehensive yet ambitious approach to developmental, social, and environmental issues.<sup>142</sup> One of the key factors of the SDGs is the incorporation of sustainable finance into the overall mapping and targets of the goals, promoting utilization of new and innovative ways to close the annual USD 2.5 trillion SDG investment gap in emerging and low-income Member States.<sup>143</sup> The MDGs were also key in setting the scene for other initiatives like the Global Reporting Initiative (GRI).<sup>144</sup> The GRI aids organizations in understanding and communicating their impact on issues such as human rights, climate change, and corruption.<sup>145</sup> Approximately 93 percent of 250 of the world’s largest corporations now report their sustainability performance utilizing GRI standards.<sup>146</sup>

While the world of investment management has made some advancements by way of setting standards, there is still much room to grow. Some of these advancements, like the Dow Jones Sustainability Index in 1999 and the Asia Pacific Index in 2009, have made it easier for investors to support companies with the best ESG practices.<sup>147</sup> Due to the popularity and public demand, ESG investing has increased substantially, leading to more demand for products than there is availability.<sup>148</sup> The UN Principles for Responsible Investment (PRI) of 2006 were created to assist investors in efforts to intentionally meet (and exceed) their “commitments to beneficiaries while aligning investment activities” with a wide range of ESG goals.<sup>149</sup> Global assets collected by the UN PRI’s 1,961 signatories have steadily increased by double-digit percentages, and reached 81.7 billion USD in April 2018.<sup>150</sup>

The development of green and social bonds has established a valuable new financing tool for corporations and Member States. The first green bond was distributed by the European Investment Bank in 2007 to fund its climate-related projects.<sup>151</sup> In 2018 there were USD 247 billion of “green, social or economic sustainability-themed debt instruments” issued.<sup>152</sup> Recently, China has become a key issuer of sustainable debt and last year sold USD 25.5 billion in green bonds.<sup>153</sup> The International Capital Markets Association’s green bond principles in 2013, the Climate Bonds Initiative, and other similar international organizations have also all aided in strengthening the “green” market.<sup>154</sup>

### ***Action by International Organizations***

The topic of sustainable financial systems was first coined by the UN in Rio de Janeiro at the United Nations Conference on Environment and Development of June 1992. The focus of the conference was the “state of the global environment and the relationship between economics, science, and the environment in a political context.”<sup>155</sup> At the Earth Summit, a part of the conference, 105 Member States congregated together to discuss their commitment

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<sup>140</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>141</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>142</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>143</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>144</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>145</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>146</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>147</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>148</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

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<sup>152</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>153</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>154</sup> Cooper, Simon. “The Evolution of Sustainable Finance.”

<sup>155</sup> Meakin, Stephanie. “The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development (BP-317E).” November 1992. <http://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm>. (Accessed August 20, 2019).

to sustainable development.<sup>156</sup> As a result of the Earth Summit, the United Nations Environment Programme – Finance Initiative (UNEP FI) was created. The goal of the UNEP FI is to establish “a partnership between United Nations Environment Programme and the global financial sector ... to promote sustainable finance.”<sup>157</sup> Their main principles and initiatives are: responsible banking, sustainable insurance, responsible investments, and sustainable stock exchanges.<sup>158</sup> Since the initiative was established, “more than 250 financial institutions, including banks, insurers, and investors” collaborate with UNEP to better understand today’s social, governmental, and environmental challenges to financial operations and what role they have in addressing them.<sup>159</sup> The UNEP FI accomplishes their goals through their biannual Global Roundtable, which has been hosted since 1994 to discuss the most pressing issues in sustainable finance with the international community.<sup>160</sup>

Other UN bodies have also tried to tackle the growing trend of sustainable financial systems. For example, the UN Economic and Social Council (ECOSOC) created the Development Cooperation Forum (DCF) in 2005.<sup>161</sup> The DCF was tasked with reviewing the latest trends and progress of international development cooperation.<sup>162</sup> It also encouraged coordination across diverse activities, institutions, and actors.<sup>163</sup> The DCF collaborates and “brings together ministers and senior experts from developing and developed Member States, parliamentarians, civil society organizations, international organizations and development banks, local governments, philanthropic foundations and the private sector” to discuss these trends and how they should be implemented in the global financial system.<sup>164</sup> These topics are discussed for two years by the forum and are based on global priorities as well as ECOSOC themes and objectives.<sup>165</sup> One of the key features of the DCF is its ability to conduct a global level follow-up and review of topics. This is crucial for “means of implementation under then 2030 Agenda” as many other bodies like the High-Level Political Forum and ECOSOC Financing for Development Forum consider the work of DCF when making decisions.<sup>166</sup> Having these trends discussed by the DCF provides Member States with a greater understanding of the impact of these topics and how to properly implement policies in their respective financial system in a realistic fashion.<sup>167</sup>

The International Finance Cooperation (IFC), an organization under the World Bank Group umbrella, established the Sustainability Framework in 2006.<sup>168</sup> These guidelines describe the IFC’s strategic commitment to sustainable development and are an essential component of the IFC’s method to limit financial risk when it comes to sustainable finance.<sup>169</sup> The Framework was revised in 2010, and the new guidelines went into effect as of January 1, 2012.<sup>170</sup> The eighteen-month revision process was necessary, because as systems change and evolve over time, so do what is considered best practice for sustainability and risk mitigation.<sup>171</sup> The revisions made necessary adjustments to overcome the multifaceted issues that are increasingly vital to sustainable businesses such as supply-chain management, resource efficiency and climate change, and business and human rights. The Framework is made up of three main sections: Policy on Environmental and Social Sustainability, Performance Standards, and Access to

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<sup>156</sup> Meakin, Stephanie. "The Rio Earth Summit: Summary of the United Nations Conference on Environment and Development (BP-317E).

<sup>157</sup> "About United Nations Environment Programme – Finance Initiative – United Nations Environment – Finance Initiative." UNEP FI. <https://www.unepfi.org/about/> (Accessed August 20, 2019).

<sup>158</sup> "About United Nations Environment Programme – Finance Initiative – United Nations Environment – Finance Initiative."

<sup>159</sup> "About United Nations Environment Programme – Finance Initiative – United Nations Environment – Finance Initiative."

<sup>160</sup> "About United Nations Environment Programme – Finance Initiative – United Nations Environment – Finance Initiative."

<sup>161</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL." United Nations Economic and Social Council. <https://www.un.org/ecosoc/en/about-the-dcf>. (Accessed August 20, 2019).

<sup>162</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>163</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>164</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>165</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>166</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>167</sup> "About the Development Cooperation Forum | UNITED NATIONS ECONOMIC and SOCIAL COUNCIL."

<sup>168</sup> "IFC Sustainability Framework." Ifc.org. [https://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/sustainability-at-ifc/policies-standards/sustainability\\_framework](https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/sustainability_framework) (Accessed August 20, 2019).

<sup>169</sup> "IFC Sustainability Framework." Ifc.org.

<sup>170</sup> "IFC Sustainability Framework." Ifc.org.

<sup>171</sup> "IFC Sustainability Framework." Ifc.org.

Information Policy. These policies articulate IFC's dedication to social and environmental sustainability, transparency, and all responsibilities for managing their social and environmental risks.<sup>172</sup>

The Financing for Development process, established by the UN SDGs, also revolves around supporting agreements and commitments decided upon during the "three major international conferences on Financing for Development: in Monterrey, Mexico in 2002; in Doha, Qatar in 2008; and in Addis Ababa, Ethiopia in 2015."<sup>173</sup> This process also tracks other related outcomes and decisions of "major UN conferences and summits in the economic and social fields, including the 2030 Agenda and the SDGs."<sup>174</sup> From this, the Addis Ababa Agenda was established in 2015 as a new international framework for financing sustainable development that "aligns all financing flows and policies" with ESG priorities.<sup>175</sup> Unlike previous agreements, the Agenda integrates SDG implementation strategies into a formal and detailed financing framework, all while serving as a resource and guide for continual actions by all stakeholders including international organizations, governments, civil society, the business sector, and philanthropists.<sup>176</sup> Some of the key topics of the Addis Ababa Agenda are: "domestic public resources, domestic and international private business and finance, international development cooperation, international trade as an engine for development, debt and debt sustainability, addressing systemic issues, and science, technology, innovation and capacity building."<sup>177</sup>

While the Addis Ababa Agenda acknowledges the DCF as the "primary platform for discussion on the quality, impact, and effectiveness of development cooperation," the Agenda has also created a yearly ECOSOC Forum on Financing for Development (FfD Forum).<sup>178</sup> The FfD Forum is an "intergovernmental process with universal participation" whose purpose is to review and follow up with the development results and multiple ways to implement the 2030 Agenda.<sup>179</sup>

The UNEP FI recently convened with 20 institutional investors from 11 Member States and released a detailed and comprehensive investor guide to "help assess how climate change and climate action could impact investor portfolios around the world."<sup>180</sup> This guide will allow investors to be more open and transparent regarding their climate-related risks, such as natural disasters resulting from climate change, and opportunities.<sup>181</sup> It also would allow them to receive recommendations from the Financial Stability Board's Task Force on Climate-related Financial Disclosures.<sup>182</sup> This Task Force will also help stakeholders "contribute to, and benefit from, the transition to low-carbon and climate-resilient economies."<sup>183</sup> This is important as climate change has already effected economies and communities globally as extreme weather events physically impact operations of business and community infrastructure.<sup>184</sup> The task force researched the monetary impact of climate change and discovered that "climate change will further exacerbate costs and risks, to the tune of USD 1.2 trillion for 30,000 of the largest listed companies."<sup>185</sup>

### ***Current Individual and Regional Initiative Examples***

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<sup>172</sup> "IFC Sustainability Framework." Ifc.org.

<sup>173</sup> "Financing for Development - United Nations Sustainable Development." United Nations Sustainable Development Goals. <https://www.un.org/sustainabledevelopment/financing-for-development/> (Accessed August 20, 2019).

<sup>174</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>175</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>176</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>177</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>178</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>179</sup> "Financing for Development - United Nations Sustainable Development," United Nations Sustainable Development Goals.

<sup>180</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI. May 10, 2019. <https://www.unepfi.org/news/industries/investment/changing-course-unep-fi-and-twenty-institutional-investors-launch-new-guidance-for-implementing-tcfd/> (Accessed August 20, 2019).

<sup>181</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI.

<sup>182</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI.

<sup>183</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI.

<sup>184</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI.

<sup>185</sup> "Changing Course: UNEP FI and Twenty Institutional Investors Launch New Guidance to Implement TCFD Recommendations." UNEP FI.



Many individual Member States and Regional Groups have set out to improve their own financial operations.<sup>186</sup> The Australian Sustainable Finance Initiative (ASFI) was created following industry discussions in 2017 and the Financing a Resilient and Sustainable Economy conference in mid-July in Sydney.<sup>187</sup> The ASFI collaborates with leaders of “major banks, superannuation funds, insurance companies, financial sector peak bodies, and academia” to establish a Sustainable Finance Roadmap.<sup>188</sup> The objectives of the Roadmap include the mobilization of capital to deliver on their global, regional, and national sustainable development goals, boosting stability and resilience of the Member State’s financial system through proper management of risk and its impact, proper public transparency and disclosures when it comes to financial decisions, and creating a systems that meets consumer and community expectations.<sup>189</sup> With this Roadmap, the ASFI can recommend policies, pathways, and frameworks to assist the Australian financial services sector and work towards a “resilient and sustainable economy, consistent with global goals such as the UN Sustainable Development Goals and the Paris Agreement on Climate Change.”<sup>190</sup> The ASFI is launching the Sustainable Finance Roadmap in 2020 and look forward to the commitment of regional and international bodies for support.<sup>191</sup>

Similarly, the UNEP FI assisted the launch of the Asia Sustainable Finance Initiative (AsiaSFI) as a mentor, also known as a “Knowledge Partner,” in January 2019.<sup>192</sup> AsiaSFI is a “multi-stakeholder platform” with a goal to aid the shift of the region’s financial income towards more “sustainable economic, social, and environmental” results by investing in projects that have a more positive economic, social, and environment results.<sup>193</sup> They plan on accomplishing this task with the help of the “finance industry, academia, and science-based organizations” to support the financial institutions operating in the region and to deepen their sustainable finance expertise. AsiaSFI focuses on standards, research and tools, engagement, capacity building, regulations and guidelines, and green financial solutions to “better understand and incorporate material ESG risks and opportunities into decision making processes across their core businesses.”<sup>194</sup> With these focus areas and the help of their global knowledge partners, AsiaSFI will continue to support and assist “financial institutions operating in Asia to stay ahead of the curve in the fast-developing sustainable finance landscape, and to proactively address emerging risks and opportunities.”<sup>195</sup>

### ***The European Union Financial System and Sustainability***

Due to the dramatic effects of the 2008 financial crisis, the European Union (EU) proposed and adopted a series of policies to “secure financial stability and improve the supervision of financial markets.”<sup>196</sup> The EU needed a more integrated financial market system to boost investment and growth throughout the continent.<sup>197</sup> This was the goal of the Capital Markets Union (CMU) proposal of 2014, a plan to establish “a true single market for capital in the EU” and deepen and further integrate the capital markets of the 28 EU Member States.<sup>198 199</sup>

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<sup>186</sup> “Sustainable Finance Initiatives.” International Capital Market Association, <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainable-finance-initiatives/> (Accessed August 20, 2019).

<sup>187</sup> “Australian Sustainable Finance Initiative.” Australian Sustainable Finance Initiative. <https://www.sustainablefinance.org.au/> (Accessed August 20, 2019).

<sup>188</sup> “Australian Sustainable Finance Initiative.” Australian Sustainable Finance Initiative.

<sup>189</sup> “Australian Sustainable Finance Initiative.” Australian Sustainable Finance Initiative.

<sup>190</sup> “Australian Sustainable Finance Initiative.” Australian Sustainable Finance Initiative.

<sup>191</sup> “Australian Sustainable Finance Initiative.” Australian Sustainable Finance Initiative.

<sup>192</sup> “Asia Sustainable Finance Initiative Launch.” UNEP FI. January 21, 2019. <https://www.unepfi.org/events/asia-sustainable-finance-initiative-launch/> (Accessed August 20, 2019).

<sup>193</sup> “Asia Sustainable Finance Initiative Launch.” UNEP FI.

<sup>194</sup> “Home,” ASFI, <https://www.asfi.asia/> (Accessed October 10, 2019).

<sup>195</sup> “Partners.” ASFI, <https://www.asfi.asia/partners> (Accessed October 10, 2019).

<sup>196</sup> “Banking and Financial Services.” European Commission - European Commission, February 7, 2019. [https://ec.europa.eu/info/policies/banking-and-financial-services\\_en](https://ec.europa.eu/info/policies/banking-and-financial-services_en) (Accessed January 13, 2020).

<sup>197</sup> “Banking and Financial Services.” European Commission.

<sup>198</sup> “Banking and Financial Services.” European Commission.

<sup>199</sup> “Capital Markets Union,” European Council of the European Union, <https://www.consilium.europa.eu/en/policies/capital-markets-union/> (Accessed January 13, 2020).

The CMU was proposed by the European Commission (EC) to mobilize capital, or financial assets including monetary funds, factors of production, and facilities in Europe.<sup>200 201</sup> CMU will allow capital to become more easily accessible to all companies, including small-to-medium enterprises as well as infrastructure projects that require capital, or money or wealth needed to produce goods and services, to grow and create more jobs.<sup>202</sup> This new financial system will allow the EU to become more integrated with their capital markets which in turn will “provide businesses with a greater choice of funding at lower costs, offer new opportunities for savers and investors, and make the financial system more resilient.”<sup>203</sup>

Along with the EU’s creation of the CMU, the EU has strived to become more financially sustainable. Based on the EU’s policies, sustainable finance is defined as “finance to support economic growth while reducing pressures on the environment and taking into account social and governance aspects” as well as risks related to ESG “that may impact the financial system, and the mitigation of such risks through the appropriate governance of financial and corporate actors.”<sup>204</sup> The EU is a strong supporter of moving to a low-carbon, more resource-efficient, sustainable economy and has continued to build and adapt its financial system accordingly. It has continued to support and aims to achieve the goals of the UN 2030 SDGs and Paris Climate Agreement of cutting greenhouse gas emissions by 40 percent. The EU is striving to fill the estimated 180 billion Euro-per-year investment gap needed to do so.<sup>205</sup> Some of the ways the EU plans on closing this gap is through the European Fund for Strategic Investments and other related initiatives.<sup>206</sup> However, due to the size of the required investment, the public sector cannot fill this capacity alone, and will need help from the private financial sector, as they have a “key role to play in reaching those goals.”<sup>207</sup> The financial sector has the ability to encourage more sustainable technology and business investments, assist in the establishment of a “low-carbon, climate resilient, and circular economy,” and establish more sustainable long term financial growth overall.<sup>208</sup> These opportunities provide Member States, specifically developing Member States, the chance to improve both economically and environmentally.

To continue to work towards achievement of the SDGs and the Paris Climate Agreement goals, the EC established a High-Level Expert Group on Sustainable Finance (HLEG) in December 2016.<sup>209</sup> This group was made up of 20 senior experts from many different backgrounds like “civil society, the finance sector, and academia” as well as “observers from European and international institutions.”<sup>210</sup> The purpose of the group was to provide recommendations to the EC on how to “steer the flow of public and private capital towards sustainable investments, identify the steps that financial institutions and supervisors should take to protect the stability of the financial system from risks related to the environment, and deploy these policies on a pan-European scale.”<sup>211</sup>

HLEG issued its final report in January 2018, which led to the creation of the Action Plan on Sustainable Finance that was adopted by the EC in March later that year.<sup>212</sup> This action plan established a “comprehensive strategy to further connect finance with sustainability.”<sup>213</sup> The main points of the plan include “establishing a clear and detailed EU classification system – or taxonomy – for sustainable activities... establishing EU labels for green financial products... introducing measures to clarify asset managers’ and institutional investors’ duties regarding sustainability... strengthening the transparency of companies on their ESG policies... and introducing a ‘green

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<sup>200</sup> “What Is the Capital Markets Union?” European Commission - European Commission, October 1, 2019. [https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union\\_en](https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union_en). (Accessed January 13, 2020).

<sup>201</sup> Hargrave, Marshall. “What’s the Difference between Money and Capital?” Investopedia. Investopedia, September 27, 2019. <https://www.investopedia.com/terms/c/capital.asp>. (Accessed January 13, 2020).

<sup>202</sup> “What Is the Capital Markets Union?” European Commission - European Commission, October 1, 2019. [https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union\\_en](https://ec.europa.eu/info/business-economy-euro/growth-and-investment/capital-markets-union/what-capital-markets-union_en). (Accessed January 13, 2020).

<sup>203</sup> “What Is the Capital Markets Union?” European Commission.

<sup>204</sup> “Sustainable Finance.” European Commission - European Commission, October 3, 2019. [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en). (Accessed January 13, 2020).

<sup>205</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>206</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>207</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>208</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>209</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>210</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>211</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>212</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>213</sup> “Sustainable Finance.” European Commission - European Commission.

supporting factor' in the EU prudential rules for banks and insurance companies.”<sup>214</sup> Overall, the main goal of this action plan was to make the EU sustainable financial system easier to understand and in compliance.<sup>215</sup>

### ***Conclusion***

Sustainable finance operations have spread greatly among individual Member States and companies due to the amount of legislation passed by international and national bodies addressing climate change and sustainability. However, access and ability to these new procedures limit their effectiveness in developing Member States and small business. There are many tools that can be utilized to become more sustainable in all sized economies, but the proper implementation of said tools is vital to success. The G-20 needs to evaluate how these practices can be implemented not only in economically successful Member States, but all Member States, as they should be the examples for the global community to follow when it comes to sustainability.

### ***Committee Directive***

The G-20 has several options to improve sustainable finance operations since sustainable finance is such a broad term itself. That being said, the committee must decide and discuss which options are most effect and efficient while still maximizing short- and long-term profits. How and when should these changes in policy be implemented? Should different policies be implemented in different Member States? What about the local vs national level? The main question that should guide your research though is do these changes mean my Member State’s long- and short-term goals in respect to the SGDs?

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<sup>214</sup> “Sustainable Finance.” European Commission - European Commission.

<sup>215</sup> “Sustainable Finance.” European Commission - European Commission.

## Group of Twenty Annotated Bibliography

### Topic I: Exploring the Use of Automation Within Advanced and Emerging Economies

Hazan, Eric and Susan Luud. *This is how workers can adapt to the age of automation*. July 16, 2018. Accessed on July 11, 2019

<https://www.weforum.org/agenda/2018/07/work-in-an-age-of-automation/>

Luud and Hazan emphasize the need for a continuous education and adaptation of all skills for human laborers to remain relevant in their fields. By the year 2030, they estimate that the need for digital skills ranging from basic abilities to interact with and operate computer systems to computer programming will increase by 55% and a rising demand for the ability to comprehend and respond effectively to emotional situations are also on the rise. Education systems will need to adapt as well by changing their curriculums to include the teaching of skills that are not currently part of the curriculum, such as proper emotional responses and creativity.

Shahid, Yusuf. “Automation, AI, and the Emerging Economies” September 13, 2017. Accessed on July 12, 2019.

<https://www.cgdev.org/publication/automation-ai-and-emerging-economies>

This article explores a thorough discussion about the different elements of automation and their impact on separate sections of the economy. This report also considers the need for development strategies to adapt in order to remain effective for the emerging economies to continue to grow. Advanced economies should also be wary of automation as they too will be impacted according to Yusuf, service and manufacturing jobs, large sectors in many advanced economies, will be severely culled off by the automation of certain repetitive tasks.

Organization for Economic Cooperation and Development. “Automation and Independent Work in a Digital Economy” May 2018. Accessed on July 10, 2019.

<https://www.oecd.org/els/emp/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf>

The impact on the job market is specifically described in this report by the Organization for Economic Cooperation and Development (OECD). Many jobs that remain resistant to the growing trend of automation are those that require low and high level skills. This is creating an environment of job polarization and the foundation for higher levels of income inequality among general populations within societies’ economies that are implementing automation. Economies where technology already has a significant role are more likely to displace jobs than in economies where technology is not as integrated.

Organization for Economic Cooperation and Development. “Determinants and Impacts of Automation: An analysis of Robot’s adoption in OECD Countries” February 2019. Accessed on July 13, 2019

<https://www.oecd-ilibrary.org/docserver/ef425cb0-en.pdf?expires=1563165622&id=id&accname=guest&checksum=DB81EDE7751A78BAA78D6A896321135F>

This report compiled by the OECD outlines trends of automation as gauged by the level of investment in industrial robots and their impact on employment. The report also reveals that automation is disproportionately used in advanced economies. A lack of empirical data on the impact of automation and robots also exists and slim few exceptions provide a closer methodical explanation of what is going on within the subject matter. Changing the methodology by which the data has been assembled has resulted in a number of different conclusions than may have been previously assumed.

Verick, Sher. *Should Developing Countries Fear the Impact of Automation on Jobs*. November 21, 2017. Accessed on July 14, 2014

[https://www.ilo.org/newdelhi/info/public/fs/WCMS\\_600471/lang--en/index.htm](https://www.ilo.org/newdelhi/info/public/fs/WCMS_600471/lang--en/index.htm)

Verick warns that the models used by Frey and Osborne to predict the rate of automation within the United States is not applicable to other countries. Asserting the absence of actual economic factors considered in the

work of Osborne and Frey, such as “relative costs, that could limit automation”. Identifying other constraints like limited credit and access to information, a common problem among smaller enterprises.

## **Topic II: Enhancing Guidelines on Sustainable Finance Operations**

World Bank Group. 2007. “Environmental, Health, and Safety General Guidelines” Last modified on April 30, 2007 <https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p>.

The Environmental, Health, and Safety (EHS) General Guidelines is a reference document which cites standards, performance levels, and measures which should be achieved for industry-specific sectors. These guidelines are established with the understanding that they can be tailored to different and specific circumstances such as variables, host Member State context, assimilative capacity of the environment, as well as an environmental assessment. The document is broken down into environmental, occupational health and safety, community health and safety, as well as construction and decommission sections, which describe goals or limitations of impact on the surrounding environment.

United Nations Environmental Programme. 2016. “Sustainable Finance: A Critical Analysis of the Regulation, Policies, Strategies, Implementation and Reporting on Sustainability in International Finance” Published February 2016. [http://unepinquiry.org/wp-content/uploads/2016/02/Sustainable\\_Finance.pdf](http://unepinquiry.org/wp-content/uploads/2016/02/Sustainable_Finance.pdf)

This report, published by the United Nations Environmental Programme, is a product of their Inquiry program. This working paper focuses on policies adopted by international banks and how they relate to the environment. From this document it becomes apparent that sustainable policies adopted by banks have had positive impacts, although it is argued here that many of those sustainable policies are accepted as a result negative press and pressure from the public. Those motivators of policy result in a lack of self-regulation and emphasize the need to update mandatory regulations so that self-regulation can occur more in line with sustainable practices and attitudes.

United Nations Environment Inquiry. “Sustainable Finance Progress Report” Published March 2019. [http://unepinquiry.org/wp-content/uploads/2019/03/Sustainable\\_Finance\\_Progress\\_Report\\_2018.pdf](http://unepinquiry.org/wp-content/uploads/2019/03/Sustainable_Finance_Progress_Report_2018.pdf)

The document reports on the progress made on financing initiatives begun in the G-20. These initiatives include the advancement of goals set by the G-20 Sustainable Finance Study Group (SFSG). These goals include, but are not limited to,: “Provide Strategic Policy Singal and Framework and Promote Voluntary Principles for Green/Sustainable Finance”.

BNP Paribas. “Climate Actions Taking Action to Accelerate The Energy Transition” Accessed on July 19, 2019. <https://group.bnpparibas/en/hottopics/climate-actions/briefing>

A critical aspect of this topic is to understand and improve the work that financial institutions have already committed too. This briefing posted by BNP Paribas assists with that understanding of what international financial institutions are already doing to improve the environmental condition of the planet. Briefings such as these should be utilized to establish a starting point with other large financial institutions in order to better adopt the current sustainable financing taking place currently.

International Capital Market Association. “Sustainable Finance Initiatives” Accessed on July 21, 2019 <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainable-finance-initiatives/#gfgfc>

The International Capital Market Association compiled a list of initiatives that are hyperlinked to other primary and secondary sources of information which relate to a respective market or existing initiative.