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Dear delegates, Welcome to PMUNC! My name is Vishan Nigam and I will be your chair for ECOFIN this year. A little bit about myself—I am a senior from nearby Princeton Junction, New Jersey majoring in Economics with certificates (minors) in Spanish Language and Culture, and Statistics and Machine Learning. I served last year as Vice President of Princeton’s International Relations Council, so I have been involved in planning PMUNC, PDI (our college conference), and our collegiate travel team. This will be my seventh PMUNC, after competing thrice as a delegate and staffing each year of college, and I hope it’s the best one yet! Outside of MUN, I am involved in a high school mentoring program called Community Link, and enjoy playing tennis and watching Premier League soccer in my free time (COYG!).

I am looking forward to chairing our discussions on the economic implications of both automation and global migration. Both topics have implications for developed and developing economies, so I urge you to draw on policies from other parts of the world as you write your own resolutions. We are already starting to see the implications of technological change in our daily lives—companies like Uber and Amazon have automated our daily travel and shopping, often bringing lower prices to consumers at the expense of the retailers, drivers, and small businesses that are left behind. In the future, the effects may be even more wide-ranging, as self-driving cars usurp drivers themselves and machine learning algorithms replace radiologists. In this context, developing countries may find it difficult to grow at all, as industrial robots preclude any possibility of broad-based manufacturing growth. The committee will consider how to best harness the benefits of automation while helping countries that lose jobs and income as a result.

Migration has been in the news recently, particularly from Syria and other war-torn regions, but in our committee we will focus on economic migrants—people who travel to another country or region for current or future employment. We will consider several cases of both high-skilled and low-skilled migration, ranging from Indian and Chinese technology workers in the United States to North and Central African migrants in Europe. Policy differences will be apparent here—immigration laws in countries like Canada and Australia generally provide a path to citizenship, while the Gulf countries (UAE, Qatar, Saudi Arabia, etc.) rely on temporary migrant labor for their own growth. Delegates may want to encourage more free movement of people along the lines of the Schengen Agreement, or they may wish to restrict immigration even more. In some cases, countries may support migration out of their own country, since expatriates often send money back home. These distinctions—temporary vs. permanent, high-skilled vs. low-skilled—will be the focus of our debate.

Remember that MUN is about having innovative, reasonable policy ideas and presenting them well, so in preparation for the conference I encourage you to work on both your research and your speaking. Lastly, whether this is your first conference or your last, do not hesitate to reach out with any questions. I look forward to meeting you all in in November!

Cheers,
Vishan Nigam
vnigam@princeton.edu
The Second Committee of the UN General Assembly, otherwise known as the Economic and Financial Committee, deals with issues of economic growth and development. Since economic policy is generally determined at the national level, ECOFIN primarily focuses on areas in which economic cooperation is possible. These include free trade, energy independence, sustainable development (which often requires financial and technical support from the developed world), tourism, money laundering, migration, government debt, and climate change.

As you can see, ECOFIN’s purview is quite broad. For our purposes, it is sufficient to note that ECOFIN is part of the UN General Assembly, and therefore that it is solely a body for discussion; it issues recommendations but has no binding power. In exploring our topics, I encourage you to focus more on the many ways in which the UN, other international bodies, member states, and the private sector have engaged actively with these issues. This will provide a solid foundation for your research, allowing you to propose solutions that demonstrate both innovative thinking and an understanding of current policy. It is perfectly within ECOFIN’s purview to recommend these policies to other actors, even if we do not have the resources or the jurisdiction to implement them directly.

One last thing to note, especially for new delegates, is that the term national sovereignty will come up many times in debate. National sovereignty implies that individual countries possess ultimate decision-making power in the international community. So for instance, if the UN wants to do anything from distribute leaflets to supervise nuclear weapons facilities in a country, that country must consent to it. This is why ECOFIN can solely recommend solutions—even if the committee votes to approve a certain resolution, the document is meaningless unless member states allows the policy to be implemented within their borders.
TOPIC A: ECONOMIC MIGRATION

Introduction

Mass media and political conversation have a tendency to focus on sudden moments of migration — civil wars, instances of political persecution, or natural disasters. In reality, the vast majority of human migration takes place for economic reasons; people migrate to earn an income. Through remittances and visits home, migrants are able to pass on these earnings to family members in origin countries, and in many cases, migrants and their families may permanently settle in the destination country. These trends are true of both high-skilled and low-skilled labor.

The economic benefits of working abroad for migrants, their home countries, and their countries of destination depend on the immigration policy of each country or region. Citizens of European Union member states, for instance, enjoy the right to work and live anywhere in the EU, for an indefinite period of time. In contrast, despite the frequency and duration of Mexican immigration to the United States, the undocumented status of many migrants inhibits both Mexican workers and their US employers.

The United Nations can play a role in the economic migration process either by proposing policies to be enacted on a unilateral or bilateral basis or by facilitating international agreements. The UN already plays a large role in refugee resettlement for victims of conflict, and refugee protections are enshrined under international law in the Geneva Conventions. Just as countries agree to accept certain numbers of asylees, they might be willing to accept large numbers of economic migrants — especially if those migrants have the skills and willingness to contribute to economic growth.

In the ECOFIN committee, delegates will focus on policies that link migration to economic growth and prosperity. Policies should focus on three main areas: promoting and regulating the
movement of high-skilled labor, promoting and regulating low-skilled labor, and capturing economic benefits for origin countries.

In other words, the committee should not focus on short-term solutions to the Syrian refugee crisis. Instead, it should craft the future system of migration in which migrants worldwide will participate and prosper.

**History of the topic**

UN member states can crudely be classified as either net receivers or providers of international migrants. Countries with the highest proportion of citizens abroad include Nepal and the Philippines. These migrants are often economically valuable — by one estimate, money sent home by Nepalis abroad amount to 32% of the GDP of Nepal. In countries like India and China, even though migrants make up a small proportion of the total citizen population, the diaspora serves as an important source of investment and income.

In contrast, the countries with the largest proportion of foreign-born residents are the Gulf countries, especially the United Arab Emirates and Qatar. Some of these residents include highly skilled expatriates from Europe and the Middle East; however, the vast majority are migrant laborers that come from South Asia to work in construction and the service sector. As I will later discuss, these migrants come temporarily and have no path to citizenship.

Unlike in the Gulf, other net recipients of migrants — the United States, Canada, and Australia — have historically been more welcoming to permanent immigrants. It should be noted


that, despite being similarly diverse, these countries have different and uncoordinated immigration systems. Canada employs a point-based system that favors young and educated immigrants\(^3\), while much of the US system relies on sponsorship by family members already in the United States.\(^4\)

In the majority of the world, migration policy is largely uncoordinated and haphazard. It is often easier, for instance, to move from African countries to Europe than amongst themselves\(^5\). Visa restrictions limit travel demand, meaning that a businessperson traveling from Senegal to Nigeria might have to transfer in Dubai. The role of ECOFIN is to discuss policies that might ease unnecessary barriers like these and enable productive economic migration.

**Current situation**

*High-skilled migration*

High-skilled migrants — such as engineers, doctors, and arguably businesspeople who are willing to invest in the destination country — are often prized by governments worldwide. They often fill lucrative positions, allowing the migrants to send money home to their families in less developed countries. On the other hand, developed countries are willing to pay for high-skilled migrants because they contribute to economically productive or otherwise critical industries. For instance, a large proportion of entrepreneurs and engineers in Silicon Valley are foreign-born\(^6\) — the United States simply does not produce enough specialized talent to fill these positions.

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Developed countries in the committee should focus on policies that they might employ to attract more high-skilled labor. First of all, the committee should consider whether to give these employees and investors permanent residency or citizenship. Doing so gives individuals an incentive to migrate and build a better life, but also carries risks — if the migrant becomes unemployed, they are the responsibility of the recipient state.

A second consideration for developed countries is skill-matching: how can countries specifically attract workers from sectors with high labor demand? There are several possibilities here. Canada, for instance, allows employers to submit vacancy notices to a database, and takes these requests into account when choosing which individuals to accept. The United States has a special program that allows medical doctors to immigrate to the U.S. if they fill positions in rural areas that struggle to attract US-trained doctors.

In many cases, however, keeping track of vacant positions is not enough; foreign licenses and training must also be recognized. Sizable numbers of nurses in UK’s National Health Service (NHS) come from Portugal, Spain, the Philippines, and India; these nurses can fill critical positions in the health system only because their foreign degrees are considered equivalent to those of the UK. Such a system does not yet exist on a regional or global scale.

As India, Nigeria, and several other developing nations might attest, there is no point in investing in such highly skilled professionals if they will emigrate and never return. This phenomenon is known as “brain drain”. Brain drain is less of a risk if the emigration is temporary.

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10 The Economist; “Drain or gain?”; [http://www.economist.com/node/18741763](http://www.economist.com/node/18741763)
but developing countries in committee should propose coping policies in the case that too many high-skilled laborers leave. One option, as I discuss later, is to leverage the money they send home; another is to attract them to return.

Multilateral policies, at a regional or global scale, can serve to encourage mobility for skilled workers. For instance, in January 2016, ten member states of ASEAN in Southeast Asia launched an online system to connect workers and employers in the tourism sector.\(^{11}\) The system verifies the legitimacy of both parties—a example of how technology can be used to craft better immigration policy. In another notable example, in 2016 African Union leaders launched the biometric “African passport”, which will allow for visa-free access to any AU member state.\(^{12}\) An African passport would benefit scientists, businesspeople, and others for whom face-to-face meetings are critical, but also brings security concerns in the absence of visas.

Low-skilled migration

Lower-skilled or unskilled migrants are much more common and are largely less welcomed, with some exceptions (for instance, the United States before World War I embraced unskilled migration from Europe). In some cases, the term is synonymous with “illegal”—EU countries refer to immigrants from poor countries other than Syria as low-skilled “economic migrants” without a case for asylum. But they often arrive legally and in large numbers, such as in the Gulf countries.

Delegates will likely disagree on the most critical policy question: should developed countries accept unskilled labor at all? Upon first glance (and according to the sentiments of many Western governments), unskilled labor might simply take jobs that native-born citizens might be able to do.

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But economic research suggests that the presence of low-skilled immigrants can be beneficial to the recipient country; Mexicans in the United States, both documented and undocumented, often fill jobs that native-born Americans are unwilling or unable to do.\textsuperscript{13} Mass immigration can also help combat demographic change, and Angela Merkel’s decision to welcome over a million Syrian refugees to Germany could actually be seen as a response to Germany’s aging population.\textsuperscript{14}

Matching screened workers to available, verified jobs is just as critical with unskilled labor. This is not just to maximize productivity, but also to prevent human rights abuses. For instance, migrant workers from India and Pakistan in the UAE are often found to be underage, and their employers (until recently) exploited the workers under a variant of slavery in which workers’ passports were confiscated and not returned.\textsuperscript{15} Delegates should consider policy solutions — leveraging technology where possible — to guarantee the legitimacy of unskilled labor abroad.

Nepal provides an example of low-skilled migration policy that might be replicable on a global level. Since 2008, the Department of Foreign Employment has mandated that any migrant who wishes to go abroad receive a foreign work permit.\textsuperscript{16} The vast majority of these permits are obtained through employment agencies that (much like tour groups) provide verification and transportation to the destination country on behalf of the employer. In doing so, the Nepali government guarantees that each migrant has a guaranteed job and minimum wage, and can advocate for migrants in the case of human rights violations abroad. Nepal has a particularly large


\textsuperscript{14} Chu, Henry; “For Germany, refugees are a demographic blessing as well as a burden”; http://www.latimes.com/world/europe/la-fg-germany-refugees-demographics-20150910-story.html

\textsuperscript{15} BBC News; “Qatar abolishes controversial ‘Kafala’ system”; http://www.bbc.com/news/world-middle-east-38298393

stake in migration — three million Nepalis, or ten percent of the entire population, work abroad\textsuperscript{17} — but the model is certainly generalizable to India, the Philippines, Mexico, and other countries with large rates of out-migration.

Outside the human rights realm, migration policy for low-skilled and high-skilled migrant involves many of the same questions. Delegates should consider whether low-skilled migrants should be welcomed temporarily or permanently. They should also consider how low-skilled migrants should be selected, since most countries receive more applications than they can accept. One option is to adopt a points-based system like Canada, selecting those who are young, speak the native language, and have other desirable characteristics. Another is to use a family sponsorship system like that employed in the United States, allowing new migrants to have a support network when they arrive.

The reality is that, despite all of the screening, unskilled migrants (including many with education but without proper licensing) may still reach developed countries, and in some cases may be willing to fill available jobs. The committee must also consider the fate of these migrants. One option is to remove all of them; another is to welcome them as political refugees are welcomed, with shelter and training. In many cases, the answer lies in the middle — the now-endangered Deferred Action for Childhood Arrivals (DACA) program in the United States enables undocumented immigrants who came to the U.S. as children to work and study in the U.S., but does not offer their parents the same benefits.\textsuperscript{18}

\textit{Capturing economic benefits for home countries}

\textsuperscript{17} Seiff, Abby; “Nepal: Economic migrants spark unlikely shifts in power”; \url{http://www.aljazeera.com/indepth/inpictures/2017/07/nepal-economic-migrants-spark-shifts-power-170717095900470.html}

\textsuperscript{18} UC Berkeley; “DACA Information; \url{https://undocu.berkeley.edu/legal-support-overview/what-is-daca/}
A common misconception is that economic development in poorer countries can disincentivize migration to the developed world. In the least developed countries, this is objectively false; additional development brings in money and information, leading to increased migration to the developed world. Migrants, however, can help enrich their home countries — by some estimates, income from migrants contributes four times as much to development as all foreign aid put together.  

Remittances — money sent home — can transform origin communities. In Nepal, for instance, remittances account for 32 percent of GDP. Their effectiveness is a function of differences in cost of living: a minimum-wage job in the EU pays an order of magnitude more than Nepali median income. Remittances pay for consumption at home, as families build larger houses and purchase more goods. They also result in increased educational attainment and better health for the children of out-migrants.

It may be in the interest of developing countries in the committee to craft policies that help maximize the gains from these remittances. One barrier to money sent home is technology. In the past, international wire services were costly and slow, but the Internet and the rise of mobile technology have changed that. Mobile payments services such as M-Pesa (largely in sub-Saharan Africa) and Paytm (in India) already facilitate local payments between individuals and vendors, and companies like Xoom facilitate electronic wire payments between international bank accounts.

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21 Ambler, Aycinena, and Yang; “Channeling Remittances to Education”; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4437739/
However, restrictions still remain — in poorer and less-educated communities, recipients and vendors might not understand how to use such technologies, and there are often size limits. With better UN-led coordination, one can imagine a world in which workers abroad make mortgage and tuition payments from their phones, allowing the next generation of citizens to benefit from remittances.

Remittances are not a long-term growth strategy, so developing countries will also have to focus on directing returning money for productive uses. For instance, if remittances are used to buy foreign-made TVs, the benefit to the family is temporary; if they are used to fund a family’s education and healthcare, the effects are multigenerational.

Even if countries have large and prosperous diaspora populations, the possibility remains that those populations have a limited desire to engage with their home countries. In China, for instance, it is common for children of the elite to settle and pursue education abroad.\(^{23}\) Due to unfavorable business restrictions or a less-desirable schooling system, these families may see no reason to work or invest in China — robbing the country of a generation of potential professionals and investors. The UN should work to advise countries on technical issues, from tax policy to education reform, that encourage diaspora populations to return and invest in their home countries.

In some cases, the inhibitors are political: wealthy Mexicans have settled in the United States for many years after fleeing drug-related violence.\(^{24}\) However, large areas of the country remain safe, and Mexico would benefit if expatriates could be enticed to return to Mexico City and elsewhere. Returning to a less-developed country is not always an undesirable proposition; in may cases, family and cultural ties can outweigh the economic return to working abroad. But challenges remain —


returning children, for instance, are often forced to integrate into Spanish-only schooling systems, causing them to struggle and limiting Mexico’s ability to take advantage of this large, English-speaking population.

**Country policy**

Migration policy is largely a national or regional issue, so it is imperative to investigate your own country’s policy. Canada and the United States, for instance, have different approaches to immigration despite their geographical proximity.

That being said, as ECOFIN, our responsibility is to discuss ways to maximize the economic benefits of migration (wherever it is actually beneficial). Many of the policies we will discuss — for instance, better mobile payments technology — are more a question of creativity than stated country policy. Finding innovative solutions will be critical to success in committee.

**North America**

The United States essentially has two separate immigration systems for high-skilled and low-skilled immigrants. High-skilled immigrants enter through visa programs (especially the H1-B) intended for certain careers, but the U.S. still has trouble attracting enough high-skilled talent. In contrast, many low-skilled immigrants enter their country either through family sponsorship or illegally; these immigrants fill demand for jobs but with clear political consequences. The US (and

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indeed, other highly developed countries) would benefit from a focus on identifying areas of high labor demand, and attracting workers from abroad in an organized manner to fill those positions. While Canada does not face large quantities of illegal immigration, its role as a net recipient of immigrants (and its points-based system) serves as an example for other developed countries. Mexico sees large out-migration to the United States, though flows have slowed as U.S. border policy becomes stricter and the Mexican economy grows. Remittances from U.S. residents and return migrants are a key area of investment and policy innovation, but the country is also concerned with reintegration of ex-migrants.

Central and South America

Central American countries (especially Guatemala, Honduras and, El Salvador) face large quantities of emigration due to political and economic instability. They will likely encourage further emigration only as long as their citizens’ rights are respected and their citizens will be allowed to work legally and profit abroad.

Under MERCOSUR, South American countries have sought to increase movement of skilled labor, but large distances still inhibit connectivity. Better visa policy — potentially working towards an EU-style system with some modicum of free movement — would help improve business links across the continent.

Europe

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Among EU members, a commitment exists to free movement of labor; within the Schengen zone (much of mainland western Europe), until the 2016 migrant crisis, there were not even passport checks at borders. But Europeans are cautious of immigrants eroding cultural integrity, and are much more likely to be in opposition to programs that allow for permanent residency of migrants from elsewhere. Eastern Europeans are somewhere in the middle — given lower levels of growth, they are not supportive of migration from outside the European Union, but do value their own access to work across the EU (after all, they stand to benefit economically from the higher standards of living abroad).

Africa

On the high-skilled front, African countries will likely support more visa-free policies like the African Passport, allowing for movement of officials and businesspeople across the continent. However, given low levels of development, much of the focus will be on ways to leverage remittances and encourage legal migration to the developed world, and to attract back any high-skilled emigrants (i.e. avoid “brain drain”).

Middle East

The Gulf countries are highly dependent on Asian migrant workers for labor and will support programs that allow them to bring in more workers at low cost. However, they are unlikely to support too many human rights protections or movements for permanent residency for those workers, or to integrate them politically or culturally into society.

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Many countries in Asia have large numbers of migrant workers abroad, especially the Philippines, Nepal, India, Pakistan, and Bangladesh. Regional migration databases and tracking systems (much like the bilateral agreements that Nepal enters into with the Gulf countries) would benefit these countries, and allow them to advocate for (and tax) workers abroad. These countries benefit from remittances, but remittances also become a source of dependence; as a result, they will be concerned with putting income from remittances towards productive investments.

East Asian countries, in contrast, face the prospect of the emigration of the economic elite. China and Korea in particular will be concerned with the issue of keeping wealthy and well-educated families from emigrating, and with facilitating home-country investments by those who do go abroad.

Questions

- Do rich countries have an obligation to welcome those fleeing economic hardship? How does this hardship compare to that faced by refugees?
- How can remittances best be leveraged for the economic benefit of poorer countries? How can technology and international bodies facilitate this transfer of capital?
- How can migration systems protect the human rights of low-skilled migrants without reducing the number of jobs available?
Technological change is a core element of the global economy — since the Industrial Revolution, large gains in human welfare have been predicated on technological innovation. These gains were often due to complementarities between humans and machines, for instance when the development of the personal computer created entirely new industries involving humans using PCs.

The side-by-side development of automation and artificial intelligence, however, threaten to upend conventional wisdom on technological change. Automation largely means the execution by machines of tasks that were once done by humans, a process that has been occurring for many years. Industrial robots, for instance, are already commonplace in developed-country manufacturing, replacing manual labor in the process. In previous eras, those whose careers were usurped by technology would re-train and pivot to a different sector of the economy — this is one reason why Western economies have gradually shifted from manufacturing-based to services-based growth.

This time, however, may be different. New robots and softwares are beginning to incorporate elements of artificial intelligence (AI). Artificial intelligence has a multitude of definitions and uses, but for our purposes, we can understand AI to be a technology that is able to think and make decisions in a way that resembles human decision-making. In other words, it is a “smart” technology, one which puts more sectors and occupations are under threat than ever before. With industrial robots, a car factory welder might be replaced; in an AI-driven economy, even the trained engineer that fixes malfunctioning robots might become redundant.

Even if workers do find jobs in other occupations or industries, rising national and global inequality may become a significant consequence of the automation and artificial intelligence. Within developed economies, income will become concentrated in the hands of those who own or work directly and in non-routine ways with new technologies, leaving the majority of workers to rely on a combination of stagnant wages and government transfers to support themselves. Global inequality may become even more severe — the skilled workforce, economic stability, and monetary resources
necessary to create or afford new technologies are all concentrated in a few developed countries. The developing world may be deprived of both present-day technologies and future development through broad-based manufacturing growth.

There are positives, of course — AI may bring down the cost of expensive services like healthcare and education, and can be used to analyze useful data for developing economies — and the committee is certainly tasked with identifying such solutions. But ECOFIN will also need to consider the many implications for inequality, and propose solutions that both democratize new technologies, prepare the workforce for new jobs, and compensate those who will be unable to earn a living as a result of technological progress.

**Current situation**

Warnings about the job-killing implications of new technologies have been floating around since the days of the Luddites, who went around England destroying cotton mills in the early 19th century.\(^{29}\) There are more recent examples: at the height of the U.S. manufacturing boom, President Kennedy expressed concerns about “maintain[ing] full employment at a time when automation…is replacing men”.\(^{30}\) Their concerns, in large part, do not ring true; it is easy to identify jobs that will be automated, but is much harder to predict the new industries that will be created in their place.

That being said, the reality is that many jobs, in both developed and developing countries, will soon become redundant. Some of them are easy to identify, especially in the developed-world service sector: self-driving cars will be the norm within twenty years, as will automated grocery-store cashiers (if we drive to stores to shop at all). But the disruption will be more far-reaching and affect

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\(^{30}\) “Automation and Anxiety”
both professional and unskilled workers. A global report on automation by McKinsey and Company found that:

*The activities most susceptible to automation are physical ones in highly structured and predictable environments, as well as data collection and processing. In the United States, these activities make up 51 percent of activities in the economy, accounting for almost $2.7 trillion in wages. They are most prevalent in manufacturing, accommodation and food service, and retail trade.*

Job loss due to automation will be determined, not by the class of worker, but by the predictability of the work. Accountants, for instance, may be vulnerable to new software, while a plumber that fixes unusual problems may still have job security. Countries facing the most change are those with low concentrations of unstructured, creative work. By one estimate, 35% of jobs in the U.K. are at risk; the equivalent figures are 49% in Japan and up to 70% in manufacturing-heavy developing economies.

In 1942, the economist Joseph Schumpeter coined the phrase “creative destruction”, which “refers to the incessant product and process innovation mechanism by which new production units replace outdated ones.” Because of creative destruction, individuals can theoretically find jobs in new industries, or in different areas of the same industry. For instance, the development of ATMs actually increased total employment in the retail banking sector. Since ATMs made basic financial

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33 MIT; “Creative Destruction”; [https://economics.mit.edu/files/1785](https://economics.mit.edu/files/1785)
transactions easier and cheaper, banks were able to open new branches in more places — and hire new employees to advise customers on more complicated savings and investment plans.\(^{34}\)

The MIT economist David Autor has argued that similar trends — which are depicted in the chart above — will continue because automation is a gradual process.\(^{35}\) As an industry grows because of automation, more jobs appear in not-yet-automized roles in that industry, until new innovation occurs and the process repeats itself. Think of the new industries that might be created by self-driving cars, which will give people more time to relax and consume. But people can only participate in new industries if they have the skills to do so. Structural unemployment — joblessness caused by technological change — will increase if people cannot re-train for the new workforce. For example, repairing self-driving cars will bring a host of new jobs only if people have the education and skills to learn the nuances of such vehicles. As a result, large investments in education and


\(^{35}\) Autor, David; “Why are there still so many jobs?”; https://economics.mit.edu/files/11563
training, from both government and the private sectors, will be necessary for workforces worldwide to adapt.

Even if sheer job loss is unlikely, job polarization at the national level is likely. In the United States, for instance, middle-income manufacturing occupations have been replaced with a combination of high-skilled professional jobs (especially in the technology sector) and service jobs (in retail, hospitality, etc.). Such lower-income occupations imply fewer and more irregular hours, decreased job stability, lower wages, and no guarantee of health insurance compared to previous middle-income jobs. Whether absolute quality of life decreases is up for debate — as I will discuss, innovation also brings lower costs of basic needs. But without redistribution, income inequality will be an inevitable characteristic of the new economy.

Developing countries also face trends of polarization; India’s technological growth, which has been powered in part by its role as an outsourcing hub, directly creates jobs for only a small portion of the population. 70% of the country remains in rural areas and outside the formal

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economy, without the English fluency or technological skills to participate. Without new jobs reaching the middle or lower end of the income distribution, the potential for poorer countries to develop is limited. Industrialization allowed poorer countries to catch up to rich ones (think of China, Japan, and South Korea), but it remains unclear if an automation-based economy will do the same\textsuperscript{37}; the fact remains that no country has ever reached middle-income status without industrializing.

The effects of automation and AI are not all destructive; technological growth tends to bring increases in living standards for the entire population. Average human life expectancy today, for instance, compares favorably to that of kings and queens in medieval Europe. At the very least, thanks to advances in medicine and public health, life expectancy in the sub-Saharan Africa today (one of the poorest regions of the world) is higher than in that of Western Europe (at the time one of the richest) in the early 1900s.\textsuperscript{38} And even if individual incomes are held constant, technological progress allows those incomes to go further. The personal computer and Internet, for instance, are relatively inexpensive technologies in the developed world that revolutionized personal communication and access to information — arguably two elements in our modern-day quality of life.

Perhaps most importantly, any innovation that decreases the cost of production will benefit consumers through lower prices. The outsourcing of large-scale manufacturing to the developing world has had subtle economic benefits for almost all consumers — if every Chinese-manufactured product was instead produced in developed world, maintaining developed-world living standards would be an order of magnitude more expensive. Future technological growth should have a similar

\textsuperscript{37} Norton, Andrew; “Automation will end the dream of rapid economic growth for poorer countries”; https://www.theguardian.com/sustainable-business/2016/sep/20/robots-automation-end-rapid-economic-growth-poorer-countries-africa-asia

\textsuperscript{38} Deaton, Angus; “The Great Escape”; print
cost-reducing effect. If robots end up running our supply chains and grocery stores, the cost of food should decrease for everyone; if machine-learning algorithms replace human radiologists, more people in the developing world might be able to afford X-rays, and life-threatening diseases might be identified earlier and more frequently.

Automation and artificial intelligence have both subtle benefits — lower costs, more accessible technologies — and significant costs due to the potential for a sudden loss of jobs. Delegates in the committee will be charged with balancing these phenomena, and creating policy proposals that will best allow their countries to grow and prosper in the context of an automated economy.

Education and Training

Robots, AI, and other new innovations will create jobs, but countries need to be ready to fill them. Artificial intelligence and machine learning scientists are largely concentrated in a few large research universities and technology companies in the United States and China. There is a dearth of such scientists at all levels, and countries in the developed and developing world need to both fund more STEM education and connect individuals to companies with a clear demand for engineers, computer scientists, data analysts, etc. Not every employee needs to be an expert on robots — basic training in coding and statistics will allow employees at almost any institution to analyze data and apply new softwares in a productive manner.

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To create a more modern workforce, education systems worldwide may need to refocus. Current systems are often exam-focused, requiring that students memorize content as opposed to learning skills like coding. Collaboration between research universities worldwide, funded by the developed world, may therefore be a particularly desirable investment (Ashoka University, a new private university in India, developed its computer science program in collaboration with the University of Pennsylvania\textsuperscript{42}). In the short-term, rich countries might have access to a larger pool of creative, tech-savvy talent, both through immigration and new offices abroad; in the long-term, emerging markets may develop high-skilled work of their own at lower cost. However, exposure to technology (in a productive sense, not in a smartphone-game-playing one) at an earlier age may also be necessary for creating technology-literate workers.

A robust apprenticeship program may also benefit more hands-on workers. In Germany, almost 60 percent of youth pursue apprenticeships instead of academic university programs; in connecting youth directly to technology companies, critical auxiliary jobs are better filled.\textsuperscript{43} In the developed and developing world, these programs may be natural complements to high-skilled work: for every individual who designs a robotic arm, several need to be trained to install and repair them at factories worldwide.

Most technology-focused education, whether in the classroom or in the workplace, is focused on new graduates. In reality, much of the necessary training will be re-training for older workers, so delegates should consider how to develop training programs that allow primary earners in families to simultaneously earn and learn.

\textsuperscript{42} Ashoka University; homepage; https://www.ashoka.edu.in/
Technological Aid and Social-Sector Applications

Whether advances in automated technologies and artificial intelligence should be freely available to all is a question of significant policy contention. Developed countries may support clear patent protection for their technology companies, much like they do for the pharmaceutical industry. Such protection allows the rich world to be the center of innovation, but may limit the dissemination of new technologies to emerging economies. However, some flexibility may be possible, especially on the software end — after all, the Internet community has largely avoided paywalls — allowing developing countries to create country-specific applications.

Developing countries may welcome technology-related aid, but only if it respects national sovereignty. A recent effort by Facebook in India to provide free access to a select suite of websites (including, of course, Facebook) faced widespread criticism in the country. In hindsight, the reaction was unsurprising, as India has a vibrant startup scene and a history of computer talent. Delegates must therefore consider how to give developing countries ownership of these technologies and not just access to them.

Another benefit of promoting developing-country ownership of new automated and AI technologies is that they can be leveraged directly for public- and social-sector applications that benefit the poor. Most people in the developed world cannot afford a car, let alone a self-driving one; however, if they can more efficiently receive government benefits thanks to electronic distribution, they can benefit even as the cost burden is borne by the government. India is again a leader here — the country has created a suite of open-source applications known as India Stack that allows third parties to work directly with Aadhaar, the national electronic ID program. Nowadays,

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44 Solon, Olivia; “It’s digital colonialism”;
45 India Stack; “What is India Stack?”; http://indiastack.org/about/
aid provider that wants to sell micro-finance plans at low cost can easily identify and authenticate individuals’ poverty level and credit from electronic records. AI is not strictly necessary here but may be useful, perhaps in identifying the individuals who need aid the most. Again, a clear role for the UN exists here: not every country has the resources to develop open-source technologies, but many would be able to use them if developed by an international body.

Health is another promising area. As previously mentioned, computer programs are now better at identifying tumors from X-rays than trained radiologists. Similar innovations are sure to come in other areas — from a video observation and a list of symptoms, an unmanned health unit might be able to diagnose basic tropical diseases better than local doctors in developing areas, who are often overworked or untrained. Conscious support from the developed world will again be necessary here, requiring coordination among UN-led agencies.

Governance is yet another area for effective policy. Automation of basic logistical tasks (such as accounting) leaves less room for graft and corruption. If a government can disseminate cash transfers without having to go through several levels of local government, more of the funds will reach their intended targets.

*Wealth Transfers*

Within rich countries, the splintering of the labor market appears inevitable. Some individuals will inevitably lose jobs, and not all will successfully be re-trained for the new economy; even among those with jobs, underemployment and lower wages will become an issue. Lower prices may partially compensate for lower incomes, but not entirely — making it conceivable that an expansion of the social safety net will become necessary. Tesla and SolarCity founder Elon Musk
recently stated that, with the advent of AI, a universal basic income will become necessary;\textsuperscript{46} in other words, the government will have to provide enough money to each person so that, even in the absence of work, they can sustain themselves.

Support for such policies will vary by country. Western European countries have a history of developing a safety net in response to technological change, and indeed many services (especially healthcare and education) are largely organized by the state. The alternative approach — to create jobs, instead of helping people thrive without them — may be more palatable in work-oriented cultures like in United States, but may become infeasible given the scale of job displacement that will take place.

\textit{Restructuring Developing Economies}

If the dominance of automation in manufacturing makes it impossible for developing countries to industrialize and reach middle-income status, then developing countries will need to find other ways to grow and feed their populations. One option is to focus on agriculture, and increase access to technologies (including software that helps to predict climate-related trends) that can increase yields for farmers.\textsuperscript{47} Another is to focus on new areas of technology in which developed countries do not yet have an advantage — China has adopted this strategy with solar, wind, and other green technology, as well as with artificial intelligence itself.

A technology industry will only employ a small number of people, and in a developing country, the low-skill jobs may simply not pay enough to bring individuals out of poverty. As a

\textsuperscript{46} Clifford, Catherine; “Elon Musk says robots will push us to a universal basic income”; https://www.cnbc.com/2016/11/18/elon-musk-says-robots-will-push-us-to-a-universal-basic-income-heres-how-it-would-work.html

\textsuperscript{47} Norton, Andrew; “Automation will end the dream of rapid economic growth for poorer countries”; https://www.theguardian.com/sustainable-business/2016/sep/20/robots-automation-end-rapid-economic-growth-poorer-countries-africa-asia
result, a need may exist for wealth redistribution from developed to developing countries, a proposal that will surely bring criticism but is not unprecedented. Such a policy may be necessary because the alternative is far worse — emerging economies might never actually grow and develop.

Country policy

Developed World

The rich world may be resistant to policies that directly support growth in emerging markets, except in cases where rich-world technology firms and other businesses can play an active role. So the U.S. might help develop a machine-learning program for good governance, but only if Google plays an active role in its implementation.

More importantly, the rich world must discuss in any resolution how to compensate workers who will earn less (if anything at all) due to job polarization. The creation of social programs will likely be encouraged by Western European countries as well as Japan and Korea, and face more resistance from the U.S. and from Eastern European countries who do not have the income to pay for such programs. These countries may propose job (re-)training as an alternative that places less direct burden on the government.

Developing World

Poorer countries will be focused on how to develop their own automated technology and AI industries. Devoting time and money to computer science and other technical education will require a clear commitment by developing country governments, as well as technical and financial support from the developed world; developing countries will therefore suggest ways to grow both independently and through partnerships with wealthier countries. Developing countries will also be
focused on the applications of AI and automation to problems that directly affect them, like governance and public health. The UN Global Pulse initiative is a first step in this direction, serving as a knowledge platform applications of “big data” in development.48

*China and India*

China and India are two countries that are still developing but have strong and growing technology sectors. As a result, they are uniquely positioned to serve as a bridge between developed and developing countries — they have both the technical know-how to craft “big data” solutions and the understanding of developed country contexts to apply them in the right contexts. India’s development of the India Stack platform, through a partnership between large technology companies and the government, could easily be extended to other countries through technical support. China already is providing funds for infrastructure development across Asia, Africa and Latin America — refocusing this aid to focus on data collection and analysis would be a natural next step.

**Questions**

- How should developed countries deal with rising technology-induced inequality within their borders? What kind of redistribution, if any, should take place?
- What technical and financial support, if any, is the rich world obligated to send to developing countries? Under what conditions might it be mutually advantageous to provide such support?
- How should the global labor force be prepared for the new economy? What kind of re-training and investment in education needs to take place?

48 UN Global Pulse; homepage; http://www.unglobalpulse.org/