

# Global Mobility: Confronting A World Workforce Imbalance

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## INTRODUCTION

The world is at a midpoint of rapid, unprecedented demographic change that is upending age structures and the geography of human population. Life expectancy continues to climb across most of the world while fertility rates have fallen everywhere, and in richer countries to far below the replacement level of about 2.1 births per woman. High income fertility rates fell from 1.8 to 1.6 births between 1990 and 2019, while average rates in upper-middle income countries fell from 2.5 to 1.8 over the same period (Table 1). The result is a stagnating and aging population in upper-middle and high income economies, accompanied by continued population growth, especially of working age populations, in the world's poorer countries. Based on UN projections from the period 2015 to 2050, Rebekah Smith and Farah Hani have calculated that prime working-age populations of OECD countries will shrink by more than 92 million people while there will be nearly 1.4 billion new working-age people in developing countries.<sup>1</sup> This paper updates and extends that analysis, including by examining the coming labor shortage. In upper middle income countries, where the forecast decline in the number of workers is even larger than in high-income countries. Unaddressed, the global workforce imbalance is a threat to economic performance in both poorer and richer countries. But it also presents a considerable opportunity to both sets of countries—if they embrace global worker mobility.<sup>2</sup>

**Table 1. Global fertility trends**

	Fertility Rate per 1,000 Women	
	1990	2019
Low income	6.5	4.6
Lower-middle income	4.3	2.7
Upper-middle income	2.5	1.8
High income	1.8	1.6
World	3.2	2.4

1 Smith, R., & Hani, F. (2020). Labor mobility partnerships: expanding opportunity with a globally mobile workforce. *Final report of the Connecting International Labor Markets Working Group*. Washington: Centre for Global Development.

2 High income countries have a GNI per capita of above \$12,696 and include Western Europe, Canada and the US, Japan, Saudi Arabia, Chile, Australia and New Zealand. Upper-middle income countries have a GNI per capita of between \$4,069 and \$12,695 and include China, Malaysia, Thailand, Brazil, Argentina, Russia, Jordan, Iraq and South Africa. Lower-middle income countries have a GNI per capita of between \$1,046 and \$4,095 and include Bangladesh, India, Pakistan, Indonesia, the Philippines, Iran, Egypt, Nigeria, Kenya and Tanzania. Low income countries have a GNI per capita of less than \$1,045 and include Afghanistan, Ethiopia, Mozambique, Sudan and Uganda.

## AGING IN RICHER COUNTRIES

Absent the impact of migration, United Nations predictions (which have been accurate in the past) suggest the total population in high income countries as a group would fall between 2020 and 2050.<sup>3</sup> In some economies, that decline would be precipitous: Japan’s population would fall from 126 million to 104 million, Germany’s from 84 to 74 million, Italy’s from 60 to 51 million. But the effect is not limited to the richest countries: China’s population, for example is forecast to be lower in 2050 than it is today. Many individual countries will see a rapid decline in the absolute size of their potential labor force in particular (Table 2). In high income countries, the population aged 20–64 will be 46 million smaller in 2050 than 2020. In upper-middle income countries there will be 85 million fewer potential workers.

**Table 2. Working age populations**

	Change in Working Age Population 2020–2050 (m)	2050 Worker Gap (m)
Low-income	440	-232
Lower-middle income	677	-231
Upper-middle income	-85	465
High-income	-46	202
World	986	297
India	199	-115
South Africa	12	-5
Mexico	17	-4
Argentina	6	-1
Australia	3	3
Saudi Arabia	4	6
Canada	2	6
Turkey	5	6
France	-2	7
UK	0	8
Indonesia	30	10
Italy	-9	14
Germany	-8	15
Japan	-20	19
Russian Federation	-15	23
Republic of Korea	-12	26
Brazil	0	27
USA	16	29
China	-160	384

*Note:* Working age population is 20–64. 2050 worker gap is additional 20–64 population over forecast required to keep the 2050 dependency ratio the same as in 2020, given forecast 2050 0–19 and 65+ population. Based on UN medium variant.

<sup>3</sup> With regard to historical accuracy, see: Keilman, Nico. “Data Quality and Accuracy of United Nations Population Projections, 1950–95.” *Population Studies*, vol. 55, no. 2, 2001, pp. 149–164.

**Table 3. Global dependency ratios**

	Dependency Ratio			Old Age Dependency Ratio		
	1990	2020	2050	1990	2020	2050
Low-income	1.42	1.24	0.88	0.08	0.07	0.10
Lower-middle income	1.14	0.80	0.72	0.09	0.11	0.20
Upper-middle income	0.88	0.61	0.79	0.11	0.17	0.40
High-income countries	0.70	0.68	0.88	0.21	0.31	0.50
World	0.95	0.74	0.78	0.12	0.16	0.28

Note: Dependency ratio is population of 0–19 and 65+ as a proportion of population 20–64. Old age dependency ratio is population 65+ as a proportion of population 20–64. Based on UN medium variant.

A stagnating or declining labor force will increase the dependency ratio: the number of young and old people not usually in the labor force compared to the working age population. Low fertility and aging will also change the drivers of the dependency ratio (Tables 3 and 4). After a period of declining dependency in both high and upper-middle income countries between 1990 and 2020 driven by reduced fertility, 2020–2050 will see rapidly rising dependency ratios in those countries driven by aging. The number of people aged 65 or older expressed as a percentage of the population aged 20 to 64 will climb from 31 percent to 50 percent in high-income countries between 2020 and 2050, and from 17 percent to 40 percent in upper-middle income economies.<sup>4</sup>

Under the UN medium forecast, Hong Kong, Taiwan, Portugal, Italy, Greece, Spain, South Korea, and Japan will all see more than seven people over the age of 65 for every ten people aged 20–64 by the year 2050. And a number of high-income countries will see total dependency ratios (including those under 20 alongside 65 plus) surpass 100 percent –including Italy, South Korea and Japan. High old-age dependency ratios in particular are historically associated with slower growth and increased fiscal challenges.<sup>5</sup>

While policies to raise fertility rates, extending retirement ages, or (finally) managing to turn automation and offshoring into a force for less work rather than simply a spur to different work should all be part of mitigation and adaptation strategies, collectively they do not appear to have

**Table 4. G-20 dependency ratios**

	Dependency ratio	
	2020	2050
India	0.72	0.64
Saudi Arabia	0.53	0.64
South Africa	0.74	0.66
Mexico	0.73	0.70
Indonesia	0.69	0.72
Brazil	0.61	0.74
Argentina	0.77	0.75
Turkey	0.70	0.77
Canada	0.64	0.79
USA	0.71	0.81
China	0.55	0.82
Russian Federation	0.63	0.83
Australia	0.71	0.83
UK	0.72	0.86
Germany	0.68	0.93
France	0.80	0.96
Italy	0.70	1.07
Republic of Korea	0.50	1.07
Japan	0.83	1.14

Note: Dependency ratio is population of 0–19 and 65+ as a proportion of population 20–64.

4 In high income countries the median age was 33 in 1990 and will be 46 by 2050, for upper-middle income countries the same numbers are 26 and 44. Source: Our World in Data citing UN Population Division, World Population Prospects, 2017 Revision <https://ourworldindata.org/age-structure>.

5 Charles Kenny and George Yang, 2021. “Can Africa Help Europe Avoid Its Looming Aging Crisis?” CGD Working Paper 584. Washington, DC: Center for Global Development.

the scale of impact and speed to be an adequate response in the next few decades. Take automation and offshoring: neither is likely to significantly help (at least in the next few decades) with a range of services jobs including nurses, health aides, teachers, construction workers and restaurant workers. These positions account for a considerable proportion of forecast future employment growth in richer countries including the United States. More broadly, there is no evidence to date that higher productivity associated with more automation or a greater number of robots in an economy are linked to lower demand for workers overall.<sup>6</sup>

Looking at the number of extra working age people that would be required to keep the overall dependency ratio the same given forecast populations under 20 and over 64, that ‘worker gap’ adds up to 202 million people in high income countries and 465 million in upper-middle income countries (Table 2). China alone will see a worker gap of 384 million connected with a working age population that will shrink by 160 million between 2020 and 2050 as the population of retirement-age workers expands.

## LABOR GROWTH IN POORER COUNTRIES

At the same time, the United Nations medium population forecast suggests that the world as a whole will have more working-age people than ever before in 2050, with a 986 million increase over 2020. Those new potential workers will be in poorer countries. And dependency ratios will continue to fall in those countries because most are still in the earlier stages of the demographic transition. The low income country dependency ratio will fall from 124 percent to 88 percent, the lower-middle income ratio from 80 to 72 percent. Dependency ratios in India will be only a little more than half that of Japan’s by 2050.

While upper-middle and high income countries are going to experience a worker gap of around 0.7 billion, the challenge in low and lower-middle income countries is to find productive employment for a potential labor force that will expand by about 1.1 billion between 2020 and 2050. Smith and Hani suggest around 40 percent of the expanded labor force in low and middle income economies as a whole are unlikely to find meaningful employment in their home countries.<sup>7</sup> IMF research notes that six out of nine million jobs created in sub-Saharan Africa since 2000 have been self-employed and largely informal, and the workforce will expand more rapidly in the future than it has in the past. This combination of demand for workers in richer countries and demand for good jobs in poorer countries presents an immense opportunity for both sets of economies. There are considerable advantages to global economic output, the workers involved, as well as sending and receiving countries if people move from low productivity high worker availability regions to high productivity low worker availability regions to find jobs.<sup>8</sup>

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6 Smith, R., & Hani, F. (2020). Labor mobility partnerships: expanding opportunity with a globally mobile workforce. *Final report of the Connecting International Labor Markets Working Group*. Washington: Centre for Global Development. Charles Kenny and George Yang, 2021. “Can Africa Help Europe Avoid Its Looming Aging Crisis?” CGD Working Paper 584. Washington, DC: Center for Global Development.

7 <https://www.cgdev.org/publication/labor-mobility-partnerships-expanding-opportunity-globally-mobile-workforce>.

8 A very partial measure of the benefit to sending countries from existing migration patterns is suggested by the fact that global remittance flows were \$540 billion in 2020 <https://www.worldbank.org/en/news/press-release/2021/05/12/defying-predictions-remittance-flows-remain-strong-during-covid-19-crisis>.

## THE BENEFITS OF ADDRESSING THE WORKFORCE IMBALANCE

A back of the envelope calculation suggests the magnitude of the potential impact on global output of sufficient movement to fill the high income and upper-middle income worker gap. The current GDP per person employed in low and lower-middle income country groups weighted by their collective share of additional working age population by 2050 is about \$15,000. The GDP per person employed of high and upper-middle income country groups weighted by their collective share of the worker gap by 2020 is about \$60,000.<sup>9</sup> If 667 million people moved from the poorer to the richer countries to fill the high and upper-middle income country worker gap at that same productivity differential, that suggests an impact on global GDP of approximately \$30 trillion dollars, or about 25 percent of global output.<sup>10</sup>

The 2050 worker gap of 202 million in high income countries compares to a current (2020) population of 1,263 million, or about 16 percent, suggesting that fully filling the gap would require adding about 0.5 percent of the 2020 recipient country population of high-income countries to mobile worker (temporary or permanent migration) stocks each year between 2020 and 2050. The 2050 worker gap of 465 million in upper-middle income countries compares to a current (2020) population of 2,655 million, or about 18 percent, suggesting a similar level of mobile worker movement over thirty years. The 465 million worker gap in high and upper-middle income countries compares to a current low and lower-middle income country populations of 3,873 million or about 12 percent, suggesting adding an additional third of a percentage point of the sending countries' starting population to permanent plus temporary emigrant stocks each year. While in all probability only a portion of the worker gap number presented above will in fact be filled by greater labor mobility, the greater the share the better.

## BUSINESS AS USUAL IS UTTERLY INADEQUATE

The scale of mobility suggested even to partially fill worker gaps is *considerably* higher than historical levels as well as that forecast by the United Nations under business as usual to 2050. The proportion of the world's people that are migrants climbed from 2.8 to 3.5 percent 2000–2020, or a 0.7 percentage point rise over two decades.<sup>11</sup> 465 million is about 5 percent of the global forecast population in 2050, to be achieved in three decades –this on top of business as usual (temporary plus permanent) migration. In addition, for most countries, existing patterns suggest migration will add significantly to dependent populations in host economies, so that their impact on the worker gap will be reduced (because many of the predicted migrants are or will be retired by 2050 while others will be children or have children of their own after arrival).

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9 Data source: World Bank. Output per worker estimated GDP PPP divided by (total labor force \* (1-modeled unemployment)).

10 Given new migrants tend to earn below the median wage in the countries where they arrive and tend to have been higher-income in their home country, this may suggest a lower economic return at least over the short term. At the same time, given the evidence of spillover benefits to migration on both sending and receiving countries as well as the fact that the worker gap is concentrated in richer upper-middle and high income countries, this estimate may be below actual benefits. Real-world natural experiments involving countries with a very large immigrant population share suggest that returns are indeed very high—see Measuring the Spatial Misallocation of Labor: The Returns to India-Gulf Guest Work in a Natural Experiment 2019 Michael A. Clemens IZA DP No. 12095.

11 UN World Migration Report, 2020.

Looking at the difference between the UN’s demographic forecasts under a zero-migration assumption and comparing them to the medium forecasts suggests how large the impact of business as usual flows will be on the worker gap and dependency ratios (tables 5 and 6). For G-20 countries with a positive worker gap, the levels of migration predicted by the United Nations under business as usual reduce the size of that worker gap by one percent or less compared to a zero-migration scenario in upper-middle income countries. The worker gap under business as usual will be reduced by between one and 22 percent in G-20 high income countries with the exception of Saudi Arabia, where the gap is reduced by 43 percent.

**Table 5. Impact of business-as-usual migration on worker gaps**

	Impact of predicted migration on reducing size of worker gap compared to zero migration scenario (%)	Impact of predicted migration on worker gap as a proportion of impact of predicted migration on population (%)
Indonesia	-1	3
China	0	11
Brazil	0	18
Republic of Korea	1	22
Turkey	1	-2
Russian Federation	2	11
Japan	3	28
France	4	11
Italy	5	23
Germany	7	19
UK	14	19
Australia	16	10
USA	19	17
Canada	22	18
Saudi Arabia	43	184

Note: limited to countries with a positive worker gap. 2050 worker gap is additional 20–64 population over forecast required to keep the 2050 dependency ratio the same as in 2020, given forecast 2050 0–19 and 65+ population. Impact of predicted migration is based on the difference between UN medium variant and zero migration variant worker gap and population forecasts.

**Table 6. Impact of business-as-usual migration on dependency ratios**

	Old Age Dependency Ratio Change Due to Predicted Migration to 2050	Child Dependency Ratio Change Due to Predicted Migration to 2050
Turkey	0	0
China	0	0
Indonesia	0	0
India	0	0
Mexico	0	0
Brazil	0	0
Argentina	0	0
South Africa	0	0
France	-1	0
Russian Federation	-1	0
Japan	-2	0
Republic of Korea	-2	0
UK	-5	1
Saudi Arabia	-8	-3
USA	-5	1
Germany	-5	1
Italy	-6	0
Australia	-9	4
Canada	-13	2

Note: Child dependency ratio is population of 0–19 as a proportion of population 20–64. Old age dependency ratio is population 65+ as a proportion of population 20–64. Change due to migration is the percentage point difference in dependency ratios between the UN medium variant and the UN zero migration variant in 2050.

Looking at the impact of each migrant on the scale of the worker gap under business as usual, in high income countries, each additional migrant only reduces the predicted size of the worker gap by 0.11 to 0.28 potential workers. Saudi Arabia is once more an outlier on this measure. In its medium variant, the UN predicts Saudi Arabia's overall population to increase by 9.8m 2020–50 compared to a 7.4m total population increase under zero migration. But the working age population under the medium variant is 4.4 million larger compared to 1.4 million growth under zero migration. Business as usual migration patterns in Saudi Arabia to 2050 increase the (absolute) working-age population more than the total population. This largely reflects the countries' mobile worker model, which is to encourage (only) temporary migration of workers.

Looking at countries worldwide with a zero-migration worker gap of greater than 500,000 people in 2050, the top ten in terms of reducing the size of that worker gap under the UN medium variant compared to zero migration are Bahrain, Oman, Saudi Arabia, Qatar, Malaysia, Sweden, Norway, Kuwait, Canada and the USA. Again, United Nations experts will be comparatively bullish on these countries' ability to attract the workers they need not least because most of these countries are already comparatively open to migration, including in some cases temporary migration.<sup>12</sup>

There are significant human rights concerns with many existing temporary worker programs as well as concerns that the availability of cheap (exploitable) foreign labor reduces the incentive to improve pay and conditions.<sup>13</sup> That said, survey evidence of Indian migrants to Gulf countries (where concerns are perhaps at their greatest) suggest migrants raise their income five-fold and appear fully aware of living and working conditions.<sup>14</sup> And Australia and Canada offer approaches more heavily geared to permanent and family migration than those in the Gulf region, and their immigration patterns are also predicted to significantly reduce old age dependency (more so than business as usual migration to Saudi Arabia). While the two countries increase child dependency in 2050 under business as usual compared to a zero-migration scenario, this may be seen as a long-term benefit in countries with fertility rates significantly below replacement.

Furthermore, existing evidence suggests it will be extremely difficult to attract the number of mobile workers required to fill high and upper-middle income country worker gaps despite the growing labor supply in poorer countries and the potential for significantly higher wages, because the great majority of people worldwide simply do not want to migrate and even fewer are making plans to do so.<sup>15</sup> That implies the terms offered to attract migrants are likely to have to improve in the face of increased global competition for mobile workers.

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12 2015 migrant population share in these countries (from the World Bank) is Bahrain 51%, Oman 41%, Saudi Arabia 32%, Qatar 76%, Malaysia 8%, Sweden 17%, Norway 14%, Kuwait 74%, Canada 22%, and the USA 15%.

13 Temporary labor migration programs: Governance, migrant worker rights, and recommendations for the U.N. Global Compact for Migration Daniel Costa and Philip Martin August 1, 2018.

14 Measuring the Spatial Misallocation of Labor: The Returns to India-Gulf Guest Work in a Natural Experiment 2019 Michael A. Clemens IZA DP No. 12095.

15 Fourteen percent of adults worldwide say they would move permanently to another country if they could but only a little more than one percent are actively making plans to move. (<https://news.gallup.com/poll/152951/Nearly-Million-Worldwide-Planning-Migrate-Soon.aspx>). Experience from regions with open borders suggest the measure of the number making plans may be the better measure of intent. Charles Kenny and George Yang, 2021. "Can Africa Help Europe Avoid Its Looming Aging Crisis?" CGD Working Paper 584. Washington, DC: Center for Global Development,

## REQUIRED POLICY REFORM

The challenges of an aging population in richer countries combined with a growing labor force in poorer countries suggest the urgent need for global coordination and reform toward mutually beneficial and considerably expanded labor mobility.

This should include the rapid expansion of skills partnerships (that help create and match talent in sending countries with labor needs in receiving countries) and closer cooperation on qualifications that allow people to do the same job in different countries without recertification. It will also require reform of visa rules to increase overall numbers, help with moving and (potentially) a shift toward greater use of temporary migration in some countries.

To ensure that the benefits of a more mobile global workforce are widely spread and that both temporary and permanent migration are both safe and socially accepted, governments in sending countries should develop mechanisms to ensure migrants are fully informed about working conditions, rights and responsibilities in receiving countries, as well as provide support for reintegration for return migrants. In receiving countries, governments should support lifelong upskilling for their domestic population, ensure housing supply can respond to any demand created by new arrivals and work support efforts toward integration including ‘twinning’ arrangements between local families and newcomers.

Increased worker mobility is not a permanent nor stand-alone solution to the global challenge of aging. Other approaches will help meet the demand for workers, including people working longer, more prime-age people working, automation and outsourcing. In addition, on the demand side some countries may make the choice to sacrifice quality of life instead of admitting more workers while, on the supply side, we have seen a sufficient number of workers may not want to move in the first place. With regard to permanent immigrants in particular, some arrive old and all age after arrival, while populations which arrive with high fertility rates rapidly converge towards the host country average fertility (and in the meantime add to young-age dependency).<sup>16</sup> Furthermore, UN forecasts suggest that while low income countries will continue to see declining dependency ratios until 2080 (when they will reach 75 percent), after that point they will stagnate and then start to rise as the last countries worldwide to undertake the demographic transition complete that journey.

But worker mobility provides time to adapt in richer countries while ensuring poorer countries have considerably more resources to support a growing number of aging dependents as the century progresses. Addressing the global workforce imbalance in the first half of the Twenty-First Century would be an awesome force for better quality of life worldwide.

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<sup>16</sup> <https://www.nationalaffairs.com/publications/detail/immigration-and-the-aging-society>,



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