"Following the syntrophic principle from nature, waste or energy from a city can ideally provide resource input for agriculture in surrounding rural areas where food for the city is produced."

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Framing the Policy Debates on the Future of Work

As a pleasure or as a burden, "work" has always been a central coordination device between humans, assigning different roles and identities to the members of a community and in this way creating an organic whole based on diverse parts endowed with a certain autonomy. Since we began to work, there have been machines or artefacts around us: Man-made arrangements of elements of the environment that help us to fulfil our roles. It is impossible to deny the role of technological innovations on growth and well-being. In the first industrial revolution back in the eighteenth century, the United Kingdom and some regions of continental Europe were leading technological innovations around steam power, and outstripped the rest of the world. The second industrial revolution at the turn of the nineteenth century saw the emergence of the United States and the proliferation of electricity-powered mass production systems. In the 1990s, the Information and Communication Technologies (ICTs) revolution fueled a series of Asian miracles that put China above the US in terms of GDP, expressed in international (PPP) dollars.

Many of these very disruptive innovations (which economists called "General Purpose Technology," or GPT) redefined the world of work. The Neolithic revolution transformed hunter-gatherers into farmers; the Industrial revolution converted the self-employed into factory workers.[1] For the subset of GPTs that emerged in the last 200 years, new labor relations came with the movement of workers from low-productivity jobs to high-productivity jobs, resulting in higher economic growth and unprecedented improvements in living standards. Countries that escaped low-growth and development traps have created new, better paid jobs by leveraging the advantages of emerging technologies in past industrial revolutions.[2] They managed to develop, adopt and adapt new technological solutions quickly and widely enough to transform them into relative gains in terms of productivity and living standards.[3]

In the current context of a new wave of technological innovation, with artificial intelligence at the center of transformative change, societies are reorienting their efforts to make the most of the new GPT. As firms are reimagining products and processes and workers are increasingly intertwined with digital tools, the world of work is again entering a redefinition process.[4] Governments are aware of these mutations, and policy frameworks regarding current and future labor markets – that cover a variety of issues,

ranging from skills to technology and regulation – are being revised to shape the trajectory of change toward a future with higher productivity and better jobs for all.[5]

There is no straightforward way to build these frameworks. Why? Because technological change is a systemic change, where diverse issues such as infrastructure, skills, demographics, and international cooperation must be taken into account. We list three significant trends: technology, the climate and demographics. We refer, of course, to artificial intelligence as already mentioned, to global warming, and to the demographic transition. We need to be able to go beyond analyzing each one of these trends in isolation, and integrate them into a unified framework. The impact of these trends on the future of work is not known in advance, but depends critically on the set of behaviors of governments, firms, and households – what we call "the response." The rapid speed of change and the consequent break with the past indicate that status quo institutions (which explain the current set of learning systems, social protection policies and incentives to innovation) are hardly up to the challenge. This is a complex matter; innovation is badly needed in public policy in diverse areas such as education, the labor market, and science and technology.

Things get more complicated. Economic and social transformation is deeply rooted in the local context. Even in the case of digitalization, which pretty much has to do with moving economic and social activities from a world made of atoms to a world made of bits, both the rate and the direction of change are conditioned by the capabilities of local firms, the stock of skills of domestic workers, the available national infrastructure, the state of government finances, etc.

The Global South differs fundamentally from the Global North in this respect. Take, for example, the discussions on technological change. Global North debates on technology and the future of work are built on the premise that AI-centered technological innovation is booming, and its growth is exponential.[6] The future is already here. In a context where the conceptual field is dominated by science fiction,[7] the Global North's narrative on the future of work represents a good first step for guiding public frameworks, as it breaks away from the – largely unfounded – fears of robots dominating humans. However, this narrative has its own set of assumptions regarding the pattern of technological change, the functioning of institutions, and, more generally, everything that matters for the future of work.

How can we enrich debates to reflect the challenges and opportunities of the Global South? We have identified four key structural features where the Global South and the Global North differ, and which need to be emphasized in any meaningful narrative about the future of work in the developing world. First, in the past, the Global South has failed to make the most of global technological innovations, and remains a follower in the age of AI.[8] This matters

because governments in the Global South cannot take exponential innovation for granted. Of course, developing countries need to understand the consequences of fast automation. However, at this point, automation is probably not as much of a threat as failing to encourage a more accelerated diffusion of new technologies. Second, the challenges of skilling and reskilling are more complex in the Global South,[9] as many current and future workers are excluded from education and training institutions. Furthermore, those who are integrated in these institutions suffer the consequences of low-quality education systems and learn the hard way that that schooling is not the same as learning.[10] From a Global South perspective, curricula reform must be addressed, but new elements of analysis – low coverage, bad quality, scarce finance – also need to enter into the picture. Third, labor market institutions differ in fundamental ways. While technological change is challenging formal jobs in the developed world, in the less developed we need to add to these threats the likely impacts in the informal sector, as non-standard forms of employment are the norm.[11] Fourth, inequality in the Global South goes well beyond income. In these countries, the uneven distribution of voice, digital capital, skills, and firms' capabilities translates into a marked inability to take advantage of emerging growth opportunities, such as technological innovations. Getting into the complex issues related to structural inequality is key for countries in the Global South.

Reframing the policy debates on the future of work to embrace systemic and locally rooted perspectives is a critical step toward creating better jobs in the future. Let's hope we are up to the challenge.

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