The IMF advocates that structural reforms are a path for economic prosperity: labor and product market reforms lead to a larger pie (GDP), and this potentially benefits everyone. However, more recently, concerns are being voiced about the *side effects* of some supply-enhancing policies, which generate both winners and losers. In the face of unequal gains (or even absolute losses) from reforms, how can politicians navigate the issue, and even manage to get re-elected given the risk of vocal opposition from the losers?

Recognizing that structural reforms may generate growth-equity tradeoffs, Jonathan Ostry's new paper analyzes the impacts of reforms on both growth and inequality. He finds that a lot depends on what type of reform is being considered. Domestic financial deregulation, external capital market liberalization, and some measures of current account reform increase both growth and inequality. But basic institutional reforms that, for example, strengthen the legal system and popular observance to the law do not seem to generate a growth-equity tradeoff. One reason to be concerned about the impact of reforms on inequality is that higher inequality may actually make growth more fragile (less sustainable): "*inequality can be bad for both the level and the sustainability of growth*," says Ostry. Some of his earlier work was based on this very topic. This adverse effect on growth will be of concern to those, including the IMF, who emphasize the supply-enhancing effects of reform.

But if reforms can harm a subset of people, should we then roll back the reform agenda? Ostry responds that reform agendas should still proceed—given that their net result is still a sizable aggregate growth dividend—but that the design of reform packages should internalize the distributional effects: "*We need to think about a package of reforms that balances winners and losers.*" A "monopoly" of winners is likely to generate a more unequal society, clearly problematic in situations where inequality is already high. In addition, beyond the ex-ante design of reform packages, Ostry believes that "*policymakers should be less shy about using redistributive fiscal policies ex post.*" His earlier work suggests that, in many cases, redistribution has insignificant efficiency costs and the resulting improvement in equality exerts a protective effect on growth.

Structural reforms are vital for countries to regain and sustain growth momentum, improve labor markets, and ensure the health of domestic markets. However, the tradeoffs with respect to income distribution may, in some cases, be inevitable. That does not imply, however, that one group in society should carry the burden of change alone. Ostry emphasizes the need for a credible commitment to protect those left behind from globalization and reform: "*Reforms have been enacted for many years, and government rhetoric has been that the potential to make everyone better off (from the larger pie) will lead to broadly-shared improvements. But we know that in practice those displaced by reform have often not seen their situations addressed (for example, through the implementation of "trampoline" policies that allow them to bounce back in jobs that give them a decent income and the resulting dignity). If this is because of binding political constraints against effective pre-distribution and re-distribution policies, governments today will have to try much harder to regain credibility in the eyes of those who have been left behind.*" Perhaps saving capitalism and globalization for the winners may require much more attention by governments to those left behind, both ex ante in the reform choices pursued, and ex post through more aggressive use of fiscal redistribution. ■

TO BOT, OR NOT TO BOT…

…that is (no longer) the question

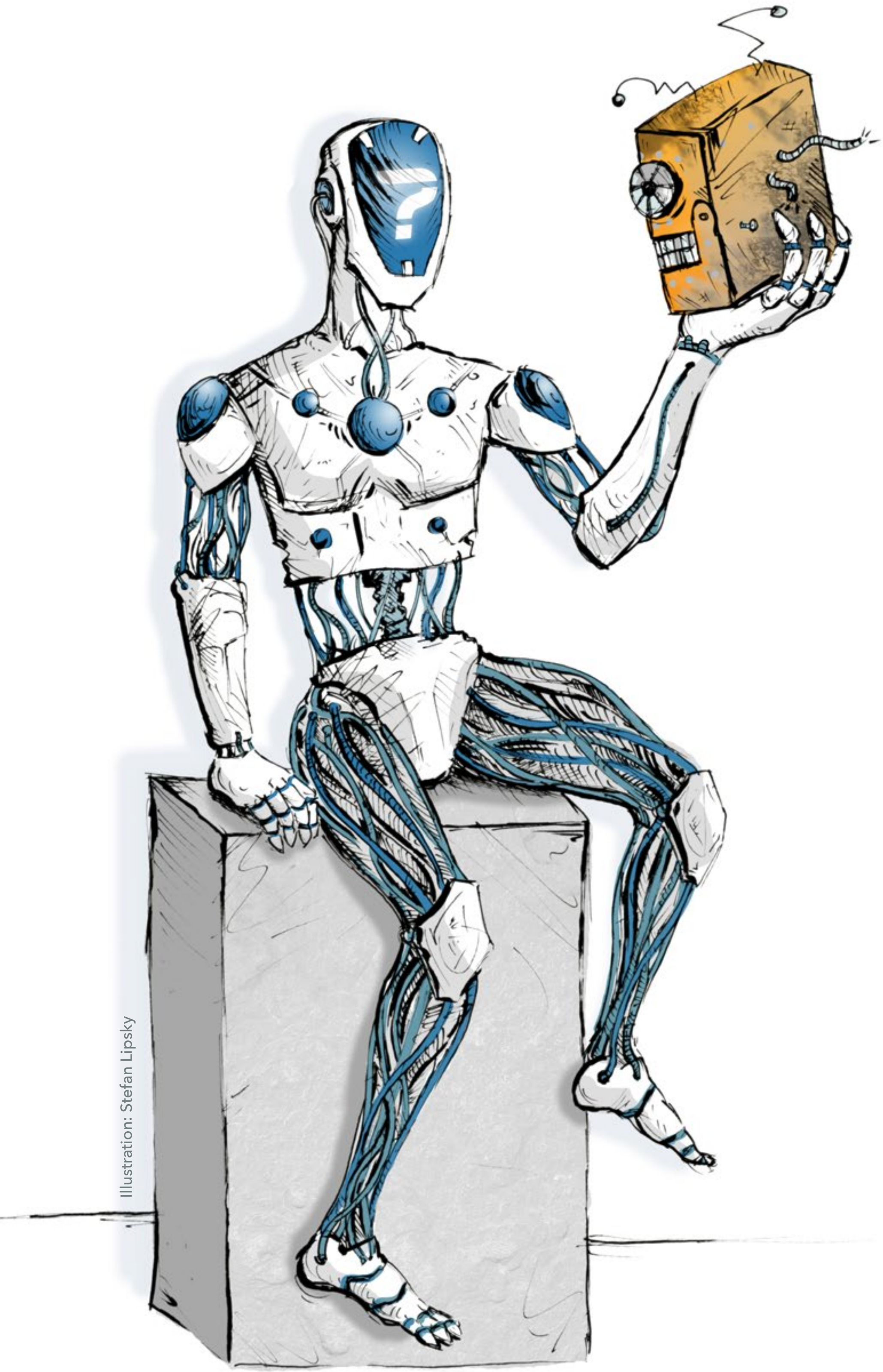

Illustration: Stefan Lipsky

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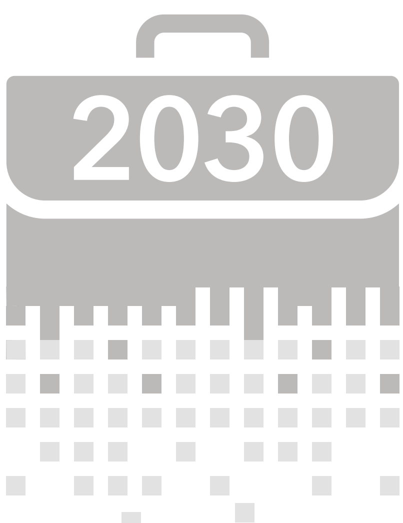
The fear of labor being displaced by technology in the ranks of production factors has haunted us since the early days of the industrial revolution. In the early nineteenth century, the low-productivity British cottage industry was adversely affected by an influx of capital investments in power looms and weaving machines in big factories. However, research shows that the wages of factory workers increased while those of independent artisans fell significantly. Evidence has been similarly perplexing when we examine more recent cases of automation. For instance, despite the fear of joblessness due to automation in the United States in the 1950s and early 1960s, a

> "It has become appallingly obvious that our technology has exceeded our humanity"
> ~ Albert Einstein

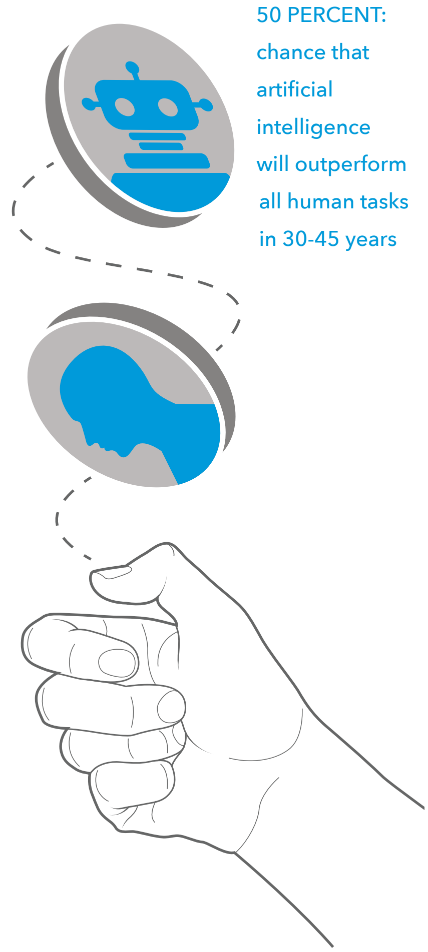
commission established to study the impact of automation on unemployment levels concluded that the level of unemployment was determined by the demand for goods and services in the economy, and not just automation alone. Similarly, evidence from 28 OECD countries between 1970 and 2007 suggests that automation created more jobs but reduced labor's share of income.

Given the historical record of technological evolution, the question arises: will the current wave of technological changes associated with machine learning and artificial intelligence be any different? Helge Berger, who, along with Romain Duval helped write an IMF report for the G20 on the *Future of Work*, says "*Though the new technologies are only beginning to make a difference, there is a possibility that the magnitude of changes due to automation may be larger this time around.*" Some researchers believe there is a 50 percent chance that artificial intelligence will outperform all human tasks in 30–45 years. As jobs get displaced, inequality may rise. IMF research shows that robots will likely improve productivity, but, at the same time, might reduce the income share of labor and widen income inequality. Automation could also reduce incentives to outsource jobs from advanced countries to emerging economies, increasing inequality between those two groups. Berger recognizes the difficulty of identifying specific disadvantages with certainty but he says one thing is for sure: "*Automation will change the way we do things. The good news is that we have changed our ways before and have done well. So, why wouldn't we do it again?*"



375 MILLION: number of workers that could lose their jobs by 2030

Automation will inevitably transform or eliminate hundreds of millions of jobs. According to McKinsey, automation may force up to 375 million workers globally to change their occupational group or learn new skills. The specifics and timing of this process, however, are highly disputed. To this end, Berger cautions, "*It is tempting to limit technological progress to avoid associated negative impacts. However, this move has almost always backfired. We must allow the change to happen; facilitate it; help those who could be adversely affected; and improve our policy frameworks to embrace this change and harness its power. It is also the right thing to do.*" Historically, technological change has been associated with higher growth, higher employment, and higher



50 PERCENT: chance that artificial intelligence will outperform all human tasks in 30-45 years

real wages. Berger believes that, while technology might displace jobs in low-skill sectors, it could also be used to augment labor in those sectors and increase productivity. It is difficult to prepare for and adapt to new practices associated with technological change, but as Einstein said, "*the human spirit must prevail over technology.*"

Economic policies have a key role to play in managing this transition, mitigating the inequity-exacerbating impacts of technological change, and maintaining adequate aggregate demand growth to support new job creation. "*Structural reforms free the economy to do new things,*" says Berger. Specifically, in the