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TRANS-ATLANTIC PRINCIPLES FOR THE FUTURE OF WORK AND LABOR AUTOMATION

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INTRODUCTION

The world is changing faster than our levers of policy can move. Using artificial intelligence, robotics, and global communication networks, entrepreneurs are breaking down barriers in new markets and upending traditional business models for consumer benefit. While this is ultimately a sign of progress, the transition between our economy and the economy of the future could be fraught with political instability if we do not help our labor markets adjust alongside innovation. For this reason, the essential question for the future of work is how we can prepare our labor markets and workforce for a period of dynamism and turnover as new technologies are incorporated throughout the economy.

This is not a new process; creative destruction has been the driving force behind much of the wealth creation of the last 200 years. But, on both sides of the Atlantic, there has been a sense—whether real or imagined—that the rate of change is speeding up and that workers might be left behind. Accordingly, in an environment marked by uncertainty about the

shape the future will take, policymakers would do well to learn from the experiences of previous attempts to prepare for waves of worker automation.

To that end, in 2018, the R Street Institute and the Konrad Adenauer Stiftung convened a set of workshops on the future of work and labor automation, first in Washington D.C. and then in Berlin. These workshops brought together experts from a diverse set of ideological backgrounds and expertise.

Taking a holistic viewpoint, we discussed previous attempts to respond to worker automation and the likelihood of various policy proposals to be effective in the future. The following policy brief should not be viewed as a comprehensive list of all discussion points or even necessarily as a consensus document with which all participating groups would agree. Rather, grounded in the discussions from the workshops, it will attempt to lay out broad principles of reform that policymakers can use to guide and augment their thinking as they prepare for the future of work.

CONSIDER THE WIDE ARRAY OF POSSIBLE FUTURES

One of the first discussion points that quickly became apparent is the wide variety of viewpoints and predictions for what our future, and specifically, what the rate of technological change, will look like.

Four recent books help showcase the widely divergent predictions about the future of technological innovation and their effect of the workforce: Ryan Avent's "The Wealth of Humans,"¹ Erik Brynjolfsson and Andrew McAfee's "The Second Machine Age,"² Tyler Cowen's "The Great Stagnation"³ and Robert Gordon's "The Rise and Fall of Economic Growth."⁴

In the first, Avent predicts that as a large supply of workers compete over the limited set of economically productive jobs available, rapid automation will leave sizable portions of the labor force unemployed or with stagnating wages. In the second, Brynjolfsson and McAfee argue that we are entering the “second half of the chessboard”⁵ and that rapid innovation will bring about massive prosperity that can be broadly shared with the right changes to our policy framework. In the third, Cowen looks backward at the last 50 years of low-productivity growth and argues that progress has slowed down and it is difficult to know when new advances will finally start boosting economic productivity. And finally, Gordon argues that we have started to reach decreasing marginal gains from new innovations and should therefore recognize that future waves of technological change will be far more muted as compared to the early 1900’s.

These are but a sampling of the expert hypotheses on the future prospects for automation and economic growth. And yet, taking just these four predictions seriously would entail pursuing radically different policy agendas to prepare for each future. While some of these visions undoubtedly seem more plausible than others, given the extreme uncertainty around the future and the poor track record of previous experts to correctly predict future economic and technological trends,⁶ policymakers would be wise not to put all of their eggs in one basket.

Of course, policymakers should be discerning and not give equal weight to all potential scenarios, but they should also remain humble about individual, specific forecasts. In general, higher probability should be assigned to projections that appear in-line with the effects of previous waves of automation and those which make specific, quantifiable predictions about the near future and are proven correct.

PRIORITIZE BROADLY BENEFICIAL POLICIES

There is a temptation to take any single, particular vision of the future at face value, especially when it is extremely optimistic or pessimistic, and to then proceed with a policy framework aimed solely at that target. However, such an approach seems unlikely to be successful. A better strategy would look for common threads between visions of the future and focus on broad, macro-stabilizing policy options that are likely to have positive effects in a wide variety of possible outcomes. Beyond that, policymakers may look for programs that can be rapidly scaled up or down depending on the future in which we find ourselves.

As a relatively simple example, consider the Earned Income Tax Credit (EITC), which has been frequently lauded as one of the most effective dollar-for-dollar tools to boost wages for low-skill workers and with little risk of disemployment.⁷ An infrastructure around this policy already exists and groups

from both the political right and left have recommended its expansion.⁸

If large swaths of workers are moved into low-productivity service sector jobs because these are more difficult to automate, an expanded EITC should help increase the realized take-home pay for these workers and maintain their standards of living. Alternatively, in an optimistic future of very high productivity and wage growth that is distributed across the entire economy, the EITC program should naturally begin to wind down as the share of workers who earn incomes above the cutoff for the program increases. Or finally, in a future with production that has been almost entirely automated and with mass unemployment, an EITC could be transitioned toward alternative programs like a Negative Income Tax or Universal Basic Income to ensure all citizens can take part in the new robot bounty.⁹

Accordingly, policies like the EITC, which seem likely to have positive or neutral effects in a wide variety of possible futures and which can be easily scaled up or down in response to rapid changes, should be given priority as we debate between various options.

INCREASE LABOR MARKET FLEXIBILITY

One theme that continued to emerge throughout the workshops was the importance of a dynamic labor market that can help re-accommodate workers in the event they lose their jobs as a result of automation. Having a flexible labor market is important for a number of reasons.

First, it enables the economy to take advantage of new productivity-enhancing innovations as workers can be quickly hired and re-trained in new booming sectors of the economy, while firms that are no longer economically efficient are phased out.¹⁰ This is the process of creative destruction in action. Labor regulations, which impede the speed at which employers can hire and fire workers or make it more difficult for workers to quit current jobs and find new ones, decrease the flexibility of labor markets to adjust to new circumstances.¹¹

Indeed, across a broad range of countries, labor market flexibility has been shown to correlate with lower unemployment rates¹² and to improve the incentives of workers to invest in more useful forms of human capital.¹³

In both the United States and Germany, policymakers can work toward greater labor market flexibility on a number of margins. First, we should aim to make worker and social benefits more portable between jobs. For example, in the United States, the reliance on employer-sponsored health insurance has led to “entrepreneurship lock,” wherein workers are less likely to start new businesses when they know they will lose

their health insurance plan as a result.¹⁴ Similar empirical findings suggest that people are less likely to switch jobs or start their own businesses because of the associated higher cost of employer sponsored health insurance elsewhere.¹⁵

Proposals to remedy this in the United States vary widely between worker-controlled benefit exchanges,¹⁶ single-payer health insurance or simply removing the tax advantage for employer-sponsored health insurance. In any event, addressing this and similar benefit-portability concerns will be key to facilitating more flexible labor markets. Insofar as we can reduce the cost of switching jobs, we are likely to see more job switching and thus a healthier and more dynamic labor market.

Second, we should recognize that policies that make it more difficult to fire workers inevitably make it riskier to hire new ones and increase the likelihood that labor is inefficiently allocated across the economy. Insofar as policymakers seek to provide income stability for workers, they would be better off providing direct wage subsidies.¹⁷ Policymakers should therefore aim to stabilize employment in general, rather than a specific job at a particular employer.¹⁸

Third, policies that reduce the geographic mobility of workers or make it more difficult to enter into new job sectors should be reconsidered. Occupational licensing, for example, has quickly grown to cover a quarter of all U.S. jobs, including many occupations where the requirements serve no obvious public safety benefit (like hair braiding and flower arranging).¹⁹ Pursuing these licenses can frequently cost thousands of dollars and take hundreds of hours, which creates a major strain on workers and disincentivizes them from considering entry to these fields. Removing occupational licenses where they serve no purpose and more carefully targeting them when necessary would therefore be low-hanging fruit to increase labor market flexibility.

It is also worth keeping in mind that while all of the above suggestions for increasing labor market flexibility would be beneficial in our current economic climate, the need becomes even more pronounced if automation begins to substantially increase the rate of job turnover. In an economy with significant labor market frictions, exposure to technological shocks runs the risk of exacerbating unemployment considerably and sparking political backlash.²⁰

RECOGNIZE THAT AUTOMATION IS DIFFICULT TO BAN OR SLOW

Some policymakers may be tempted to look at the political difficulties of creating a dynamic labor market and conclude that it will be easier or more prudent to slow down the pace of automation or to ban it entirely. Even if this were a desirable course of action, it may be largely impossible.

History is littered with examples of labor unions and politicians attempting to slow down or avoid certain forms of worker automation.²¹ While a few of these attempts may have appeared to be temporarily successful, by and large, efforts to stop automation have failed over the medium and long run.²² Meanwhile, the efforts themselves caused significant and unnecessary social strife, as pessimistic concerns about permanent technological unemployment have turned out to be incorrect.²³

In an increasingly globalized world, our ability to stop or slow particular technologies from evolving is further limited. Even if the United States or the European Union were to successfully ban a form of automation, this would only lead to technical investment leaving our borders for more welcoming regulatory jurisdictions like China or India.²⁴ If other countries gain and maintain a technological edge in manufacturing, more domestic production will instead be outsourced. This would likely lead to similar or worse job losses from offshoring than those that we attempt to avoid from automation in the first place.

Recognizing the futility and counterproductivity of banning or slowing automation should only strengthen the resolve of policymakers to undertake the more systemic reforms necessary to strengthen our labor markets and education systems.

ENCOURAGE EXPERIMENTATION; RECOGNIZE LIMITS

Representatives from both the United States and Germany shared a common thread of ideas on the challenges that face today's students and workforce. There was a consistent emphasis on the growing complexity of work and the need for recurring skill development. If the pace of technological change begins to accelerate, creating an infrastructure that prepares students for a variety of careers and provides opportunities for existing employees to re-skill becomes even more crucial.

As policymakers begin to tackle this problem, they should recognize that we cannot necessarily predict beforehand which reforms will best achieve these goals. For example, the education system is incredibly complex and the needs of students will be constantly evolving. For this reason, we should embrace experimentation and be willing to fund a variety of approaches to education reform and workforce preparation. Ideally, this could best be achieved through small-scale, randomized controlled experiments to maximize the external validity of the studies.²⁵ Approaches that show promise can then be scaled-up for further study or implementation.

Looking at approaches to education and re-training that have been successful in other countries, especially those at similar levels of economic development, is an obvious choice to find

models with which to experiment. However, we should also be careful to recognize that some models are closely integrated with a country's culture and history and may not apply as well outside of that context.

For example, many commentators have suggested the United States could learn from Germany's broadly successful apprenticeship system for manufacturing and skill positions.²⁶ There are already some efforts to export this dual-training system to other countries. Recently, the German Chamber of Commerce and Industry has launched pilot programs in Slovakia, Latvia, Spain, Portugal, Italy and Greece.²⁷

However, the projects are by no means indications that the rest of the world should adopt this model right away, as they are relatively new and the countries are all fellow EU member-states. Accordingly, they are all closely connected already in labor, regulatory and monetary policy. Even with these similarities, in order for these projects to be sustainable in the long term, the model will have to be adapted to the respective social characteristics of each individual country.²⁸

As discussed during the workshop, it appears that this model might be even less applicable to the United States for a number of reasons. Primarily, the German apprenticeship model is based on a heavily unionized workforce that can harshly punish defectors and discourage jumping ship during the apprenticeship time period. While the United States may be able to adapt certain aspects of the German model, without radically reshaping U.S. labor markets around stronger union control in manufacturing sectors, it seems unlikely it will have much success with a full-scale adoption.²⁹

Nevertheless, considering the scope and scale of the problem, experimentation along these margins should be encouraged. And, learning from the successes of our trans-Atlantic allies is a logical place to begin.

THE FUTURE OF WORK IS BROADER THAN WE REALIZE

There is a temptation to look strictly at labor, education and technology policy as the primary issues that affect the future of work. But seemingly unrelated macroeconomic forces like the cost of housing and monetary policy, in particular, have an enormous effect and thus should not be ignored.

For example, in the United States, interstate migration has been steadily declining for the past 30 years.³⁰ This is a symptom of an unhealthy labor market, as individuals and families are not moving toward better job opportunities as they once did.³¹ While there are a number of factors likely at play here, one significant issue has been the skyrocketing cost of owning or renting a home in high-productivity coastal cities like San Francisco, New York and Washington, D.C.³² In

turn, this seems to be most affected by the lack of new housing stock being built in these cities due to restrictive local zoning regulations.³³

Until more dense housing options are allowed, the cost of living in these cities will remain prohibitively high for a large swath of workers, effectively locking them out of the parts of the country with the most economic growth and job opportunities.³⁴ For this class of workers then, the future of work is closely intertwined with housing and local zoning policy.

Monetary policy also serves as an underrated future-of-work policy issue that is frequently left out of the discussion. However, the policies and mandates adopted by both the Federal Reserve and the European Central Bank can, and will, have an impact on worker bargaining power and labor readjustment time. This is especially the case if our economy is entering a period of rapid productivity growth fueled by labor automation.

Some participants and commentators have suggested that by switching the central bank's mandate from an inflation target to a nominal-GDP-level target,³⁵ we would be better positioned to pass along the gains from a large productivity boost to workers.³⁶ Essentially, if massive productivity gains lead to lower production costs, the savings should naturally be passed along to consumers in the form of lower prices and thus higher real wages. But, if central banks continue to use a traditional inflation target as their mandate, they could completely offset this effect and inadvertently shift the income share away from labor and toward capital.³⁷

This line of thinking would lead to the conclusion that while huge increases in productivity could be a positive outcome, if the relevant central banks continue using an inflation target rather than a nominal-GDP target, they could substantially increase income inequality above and beyond what "natural" market outcomes might have produced.³⁸

Regardless of whether these particular proposals discussed during the workshop prove to be the most effective for preparing for labor automation and higher productivity growth, this discussion should hopefully illustrate that the range of policies we consider under "future of work" should be broader than has traditionally been contemplated.

CONCLUSION

Most predictions made in the past about our world today turned out to be clearly incorrect. We should similarly expect to miss many details about what the future of work and labor automation may entail. For these reasons, flexibility, humility and clear-eyed judgement will be core attributes needed from effective policymakers of tomorrow. However, even today, we can begin the hard process of reform by using the

broad principles articulated above to guide and augment our thinking.

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ENDNOTES

1. Ryan Avent, *The Wealth of Humans* (St. Martin's Press, 2016).
2. Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age* (W. W. Norton & Company, 2014).
3. Tyler Cowen, *The Great Stagnation* (Plume, 2014).
4. Robert Gordon, *The Rise and Fall of American Growth: The U.S. Standard of Living since the Civil War* (Princeton University Press, 2017).
5. The "second half of the chessboard" refers to an analogy for exponential growth in which a single grain of rice is placed on the first square of a chessboard and on each subsequent square it doubles. While the amount of rice appears to grow slowly at first, by the time the second half of the chessboard is reached, the number of grains reaches astronomical levels.
6. David Autor, "Why Are There Still So Many Jobs? The History and Future of Workplace Automation," *Journal of Economic Perspectives* 29:3, pp. 3-30 (Summer 2015). <https://economics.mit.edu/files/11563>.
7. See, e.g., Natalie Holmes and Alan Berube, "The Earned Income Tax Credit and Community Economic Stability," The Brookings Institution, Nov. 20, 2015. <https://www.brookings.edu/articles/the-earned-income-tax-credit-and-community-economic-stability>.
8. Chuck Marr, "One Anti-Poverty Initiative Both Sides Can Agree On," Center on Budget and Policy Priorities, January 24, 2014. <https://www.cbpp.org/commentary/one-anti-poverty-initiative-both-sides-can-agree-on>.
9. This should not necessarily be viewed as an endorsement for either of these policies but merely an example of the wide array of ideological visions that could be serviced by an expansion of the EITC.
10. See, e.g., Ricardo Caballero et al., "Effective Labor Regulation and Microeconomic Flexibility," *National Bureau of Economic Research Working Paper* No. 10744, September 2004. <http://www.nber.org/papers/w10744>.
11. Ibid.
12. See, e.g., Lorenzo E. Bernal-Verdugo et al., "Labor Market Flexibility and Unemployment: New Empirical Evidence of Static and Dynamic Effects," International Monetary Fund, March 2012. <http://www.imf.org/external/pubs/ft/wp/2012/wp1264.pdf>; and Horst Siebert, "Labor Market Rigidities: At the Root of Unemployment in Europe," *Journal of Economic Perspectives* 11:3, pp. 37-54 (Summer 1997). <https://www.aeaweb.org/articles?id=10.1257/jep.11.3.37>.
13. See, e.g., Djavad Salehi-Isfahani and Russell D. Murphy, "Labor market flexibility and investment in human capital," *Virginia Polytechnic Institute and State University Working Papers* e06-5, 2006. <https://ideas.repec.org/p/vpi/wpaper/e06-5.html>.
14. Robert W. Fairlie et al., "Is Employer-Based Health Insurance a Barrier to Entrepreneurship," *Institute for the Study of Labor Discussion Paper* No. 5203, Summer 2010. <http://ftp.iza.org/dp5203.pdf>.
15. Manpreet Singh and S. Lakshmi Naaraayanan, "Worker Mobility and Firm leverage: Evidence from State Health Mandates," *Georgia Tech Scheller College of Business Research Paper* No. 17-28, May 9, 2018. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3002089.
16. Eli Lehrer, "The Future of Work," *National Affairs*, Summer 2016. <https://www.nationalaffairs.com/publications/detail/the-future-of-work>.
17. Samuel Hammond, "The Free-Market Welfare State: Preserving Dynamism in a Volatile World," The Niskanen Center, May 2018. https://niskanencenter.org/wp-content/uploads/2018/04/Final_Free-Market-Welfare-State.pdf.
18. Ibid.
19. C. Jarrett Dieterle and Shoshana Weissmann, "The Licensing Logjam," *National Affairs*, Spring 2018. <https://www.nationalaffairs.com/publications/detail/the-licensing-logjam>.
20. Federico S. Mandelman and Francesco Zanetti, "Flexible Prices, Labor Market Frictions, and the Response of Employment to Technology Shocks," *Federal Reserve Bank of Atlanta Working Paper Series* No. 2013-16, December 2016. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.11.568.5227&rep=rep1&type=pdf>; and Hammond. https://niskanencenter.org/wp-content/uploads/2018/04/Final_Free-Market-Welfare-State.pdf.
21. Joel Mokyr, "The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?," *Journal of Economic Perspectives* 29:3 (Summer 2015), pp. 31-50. <https://www.aeaweb.org/articles?id=10.1257/jep.29.3.31>.
22. Ibid.
23. Autor. <https://economics.mit.edu/files/11563>.
24. See e.g., Adam Thierer, "Innovation Arbitrage, Technological Civil Disobedience & Spontaneous Deregulation," Technology Liberation Front, Dec. 5, 2016. <https://techliberation.com/2016/12/05/innovation-arbitrage-technological-civil-disobedience-spontaneous-deregulation>.
25. Randomized controls trials (RCTs) are considered the "gold standard" for experimental design because they ensure that the results of the study are not being conflated with the effect of unrelated factors like the family income and demographics of the students being studied. For more on the value of RCTs in government policy making, see, e.g., Stuart Buck and Josh McGee, "Why Government Needs More Randomized Controlled Trials: Refuting the Myths," Laura and John Arnold Foundation, July 2015. https://www.arnoldfoundation.org/wp-content/uploads/2015/07/RCT_FINAL.pdf.
26. John Ydstie, "Robust Apprenticeship Program Key To Germany's Manufacturing Might," *National Public Radio*, Jan. 4, 2018. <https://www.npr.org/2018/01/04/575114570/robust-apprenticeship-program-key-to-germanys-manufacturing-might>.
27. See, e.g., Thomas Köster, "Jugendarbeitslosigkeit in Europa - eine europäische Verantwortung," *Konrad-Adenauer-Stiftung Analysen & Argumente* 269:2017, July 2017. http://www.kas.de/wf/doc/kas_49667-544-1-30.pdf.
28. Ibid.
29. A full analysis of which aspects of the German apprenticeship model could be successfully adapted is unfortunately beyond the scope of this policy brief.
30. Tyler Cowen, *The Complacent Class* (St. Martin's Press, 2016), pg. 28-29.
31. Ibid.
32. Edward Glaeser et al., "Why is Manhattan So Expensive? Regulation and the Rise in House Prices," *National Bureau of Economic Research Working Paper* No. 10124, November 2003. <http://www.nber.org/papers/w10124>.
33. Ibid.
34. Edward Glaeser, "Reforming land use regulations," The Brookings Institution, April 24, 2017. <https://www.brookings.edu/research/reforming-land-use-regulations>.
35. David Beckworth, "The Knowledge Problem in Monetary Policy: The Case for Nominal GDP Targeting," The Mercatus Center, July 2017. <https://www.mercatus.org/system/files/mercatus-beckworth-nominal-gdp-targeting-mop-2017-v1.pdf>.
36. David Beckworth, "A Partial Solution to Income Inequality," *Macro Musings Blog*, April 27, 2015. <http://macromarketmusings.blogspot.com/2015/04/a-partial-solution-to-income-inequality.html>.
37. Ibid.
38. Ibid.