

Maria Morrissey

Professor Evans

A.I. PAV

December 10, 2018

## A.I. & Universal Basic Income

An impending Artificial Intelligence revolution has the potential to change the nature of work in the U.S. and exacerbate our present income inequalities. In the U.S. it is estimated that in the next 12 years, 1 out of 3 American workers are at risk to lose their jobs to new technologies.<sup>1</sup> The average global estimates of jobs at risks to replacement by automation is 57%.<sup>2</sup> This problem will have far reaching consequences in job sectors from truck drivers to construction laborers.<sup>3</sup> We are progressing towards what could possibly be the greatest technological shift the world has even seen. With a potentially severe economic problem, high profile entrepreneurs from Elon Musk to Mark Zuckerberg and economists have discussed and supported using a Universal Basic Income as the answer to automation. I propose using a Universal Basic Share program as the best pilot program to preventing a disruption to our economy by automation.

### I. Artificial Intelligence & Automation

There is growing acknowledge and discussion that as Artificial intelligence develops and automation improves it will transform the nature of work. A November 2017 report from global management consulting firm McKinsey on the effects of automation on jobs, skills and wages expects 400 million to 800 million people could be displaced by automation in the next 12

---

<sup>1</sup> yang

<sup>2</sup> Kingma, Luke. "Universal Basic Income: The Answer to Automation? (INFOGRAPHIC)." *Futurism*, Futurism, 12 May 2016, [futurism.com/images/universal-basic-income-answer-automation](http://futurism.com/images/universal-basic-income-answer-automation).

<sup>3</sup> Kingma

years.<sup>4</sup> Automation will not only effect low wage and low skill jobs but middle-income jobs like office workers, junior workers.<sup>5</sup> Lower incomes and potential unemployment looming for middle income workers, governments could face fundamental problems like lost taxes and dissatisfied voting classes.<sup>6</sup> These predictions create a pressing problem that needs to be addressed by our government, businesses, and us as citizens. This disruption of our current economy by automation is a threat whether or not we choose to address it or prevent it. However, some disregard the threat of automation and believe that automation will create new jobs, as the Industrial Revolution did. Yet, having blind optimism that at a minimum 400 million new jobs will be created in response to automation is not a solution that I support. Funding research to potential solutions is a proactive solution that could curb the effects of automation and may be the solution that saves our economy and middle class.

## II. Universal Basic Income as a Solution

Following many discussions of the future of work and automation is the mention of Universal Basic Income as a program that may be needed in the future to uphold our economy and redistribute the immense wealth created by technology. A universal basic income (UBI) is a fixed amount, at a level sufficient for subsistence, given by the state to all its citizens regardless of income or work status.<sup>7</sup> UBI is often proposed to be distributed at scheduled intervals, a week, month, or even a year.<sup>8</sup> The average amount proposed is around \$10,000 annually (about 20% of

---

<sup>4</sup> Manyika, James, et al. "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages." *McKinsey & Company*, McKinsey Global Institute, Nov. 2017, [www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages](http://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages).

<sup>5</sup> Gray, Richard. "Future - How Automation Will Affect You – the Experts' View." *BBC News*, BBC, 23 May 2017, [www.bbc.com/future/story/20170522-how-automation-will-affect-you-the-experts-view](http://www.bbc.com/future/story/20170522-how-automation-will-affect-you-the-experts-view).

<sup>6</sup> Gray

<sup>7</sup> Kingma

<sup>8</sup> Kingma

average earnings), although this amount varies widely from country to country.<sup>9</sup> The cost of UBI in the U.S. would be about \$3.2 trillion, or \$1.5 trillion if excluding payments to households earning more than \$100,000, retirees receiving Social Security, and children.<sup>10</sup> Proposals vary in how they will fund the program but possible sources of funding include: carbon taxes, income taxes, value added tax, negative interest rates, earnings from investments, decreases in military spending, sovereign wealth funds, and resource-based revenues.<sup>11</sup>

Universal Basic Income can be a solution for the future of automation and preventing a rapid increase in the amounts of economic inequality in our country. UBI is a way to distribute the fruits of technological advancement fairly, in order to correct for the eventual job loss caused by automation. The most substantial benefit would also be to eliminate households living below the poverty line.<sup>12</sup> Some even cite a potential for people to explore creativity, entrepreneurship, and research. Nobel prize-winning economist, Paul Krugman, has argued that a minimum income is a way to cushion the blow from the automation revolution, a way of ensuring the middle class isn't decimated in the transition to a new economy.

Those who argue against the implementation of UBI frequently mention a few potential consequences. First, they believe providing a UBI would disincentivize people from being productive and working. There is also doubt that governments will be able to sustain funding for UBI without taking funding for other crucial programs. In addition, some speculate the program would lead to inflation in result of a global benefit.

### III. Successful Examples

---

<sup>9</sup> Kingma

<sup>10</sup> Kingma

<sup>11</sup> Kingma

<sup>12</sup> Kingma

Universal Basic Income has been attempted in various different forms within the United States and around the World. In Dauphin, Manitoba, Canada from 1975-1980, there was a successful Universal Basic Income Pilot Program.<sup>13</sup> The program gave an individual \$3,386 (\$14,663.63 adjusting for inflation) or \$4,907 (\$21,250.59 today) to an average family.<sup>14</sup> The program concluded that the UBI decreased the amount of hospital visits and increased the amount of education.<sup>15</sup> Within the U.S., Alaska has implemented a successful program similar to UBI called “Alaska Permanent Fund Dividend” that began in 1982.<sup>16</sup> The state pays out an annual dividend of its natural resource revenues (oil and minerals) to all permanent residents. The payment amount varies between \$800-2000 a year per citizen.<sup>17</sup> Researchers compared residents’ behavior before and after the dividend to decide the effects of the payments on workforce participation.<sup>18</sup> They found no change in full time employment and a 17% increase in the share of Alaskans who worked part time.<sup>19</sup> The increase in purchasing power resulted in 10,000 additional jobs for the state.<sup>20</sup> A study from the University of Alaska Anchorage found that the income from the dividend lifts 15,000 to 25,000 Alaskans above the poverty line, each year, with an outsized effect in rural parts of the state.<sup>21</sup> A recent survey from 2017 reported that

---

<sup>13</sup> Lant, Karla. “Universal Basic Income: UBI Pilot Programs Around the World.” *Futurism*, Futurism, 8 Feb. 2017, [futurism.com/images/universal-basic-income-ubi-pilot-programs-around-the-world](https://futurism.com/images/universal-basic-income-ubi-pilot-programs-around-the-world).

<sup>14</sup> Lant

<sup>15</sup> Lant

<sup>16</sup> Lant

<sup>17</sup> Lant; Coren, Michael J. “When You Give Alaskans a Universal Basic Income, They Still Keep Working.” *Quartz*, Quartz, 1 Aug. 2018, [qz.com/1205591/a-universal-basic-income-experiment-in-alaska-shows-employment-didnt-drop/](https://qz.com/1205591/a-universal-basic-income-experiment-in-alaska-shows-employment-didnt-drop/).

<sup>18</sup> Coren

<sup>19</sup> Jones, et al. “The Labor Market Impacts of Universal and Permanent Cash Transfers: Evidence from the Alaska Permanent Fund.” By Jikun Huang, Ruifa Hu, Scott Rozelle, Fangbin Qiao, Carl E. Pray :: SSRN, 22 Feb. 2018, [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3118343&utm\\_content=buffer0e9c8&utm\\_medium=social&utm\\_source=twitter.com&utm\\_campaign=buffer](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3118343&utm_content=buffer0e9c8&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer).

<sup>20</sup> Kingma

<sup>21</sup> Zak, Annie. “Study on Universal Basic Income Finds Alaska's PFD Has 'No Effect on Employment'.” *Anchorage Daily News*, Anchorage Daily News, 15 Feb. 2018, [www.adn.com/business-economy/2018/02/14/study-on-universal-basic-income-finds-alaskas-pfd-has-no-effect-on-employment/](http://www.adn.com/business-economy/2018/02/14/study-on-universal-basic-income-finds-alaskas-pfd-has-no-effect-on-employment/).

71% of 1,004 Alaskan voters survey preferred to save the dividend and raise taxes, compared to 36% who preferred to end the dividend and not raise taxes.<sup>22</sup> Yet, it is important to note that the Alaskan dividends are not a full UBI as they do not cover minimal living expenses.

Most recently, Silicon Valley's largest startup accelerator, Y Combinator, announced that in mid-2019 it would begin paying out monthly salaries to families in two states between \$1,000 and \$2,000 a month.<sup>23</sup> The ultimate start date is still unclear because the funding for the program is still being obtained. A Gallup 2017 poll found that 48% of Americans support a universal basic income program as a way to help Americans who lose their jobs because of advances in artificial intelligence. Other countries that have started or proposed UBI pilot programs in recent years include Canada, Scotland, Kenya, Uganda, Brazil, Finland, India, Italy, France, and the Netherlands.<sup>24</sup>

#### IV. Proposed Solution

From my research, I found that the best proposal for UBI was from economists, Kalle Moene and Debraj Ray. They propose a, "minimum income for everyone as a fixed proportion of gross national income— Universal Basic Share (USB)."<sup>25</sup> The payment would not be a fixed sum of money, but rather depend on the gross national income. In their proposal, they envision 10% to 12% of gross national income set aside for a universal basic income.<sup>26</sup> They cite three important reasonings for this decision. First, the poor would receive an amount that is independent of personal income. Second, the amount paid is automatically linked to inflation.

---

<sup>22</sup> Coren

<sup>23</sup> Weller, Chris. "8 Basic Income Experiments to Watch out for in 2017." *Business Insider*, Business Insider, 24 Jan. 2017, [www.businessinsider.com/basic-income-experiments-in-2017-2017-1](http://www.businessinsider.com/basic-income-experiments-in-2017-2017-1).

<sup>24</sup> Lant; Tognini, Giacomo. "Universal Basic Income, 5 Experiments From Around The World." *WorldCrunch*, 23 Feb. 2017, [www.worldcrunch.com/culture-society/universal-basic-income-5-experiments-from-around-the-world-1](http://www.worldcrunch.com/culture-society/universal-basic-income-5-experiments-from-around-the-world-1).

<sup>25</sup> Nickelsen, Trine. "Leading Economists Promote Guaranteed Minimum Income." *Phys.org - News and Articles on Science and Technology*, Phys.org, 3 Mar. 2017, [phys.org/news/2017-03-economists-minimum-income.html](http://phys.org/news/2017-03-economists-minimum-income.html).

<sup>26</sup> Nickelsen

Third, citizens would have no need to fight government to adjust the amount to keep pace with the growth in the national income. Significantly, this universal basic income proposed gradually increases as technological developments forge ahead, resulting in the prosperity being shared by everyone. They assert urgency in implementing this system before it becomes more difficult to do so as inequalities become greater and a small minority becomes super rich on new technology. In addition, to the benefit of continuous redistribution, they predict great improvements on development, especially in poorer countries.

To implement this program, the U.S. could set up experiments that test the effects and feasibility of a UBS/UBI. At the start of the next fiscal year, the government could select a diverse set of counties in the U.S. to test the program. The citizens would receive a UBI that is proportional to our gross national income. After five years, or another designated time frame, researchers could study how the families spent their UBI, the level of full time employment, part time employment, education levels, amount of citizens in poverty, citizens approval of the program, and cost-benefit analysis. In addition to the Alaska Permanent Dividend Fund, the research by Y Combinator, and current pilot programs done in other countries, this UBS program would help us understand the potential of using a form of Universal Basic Income to bolster our economy from developing technology.

Automation is a phenomenon that is beginning to be accepted as the future of technological developments. Whether automation will replace millions of jobs or create millions of jobs, it is irresponsible for our country to not explore options that can correct inequalities present now or in the future. Universal Basic Income is a solution that should be explored and researched. Once we have the research to see consequences of its implementation, then we will be better able to judge its usefulness, and if not, we will have to keep researching.

### Works Cited

- Coren, Michael J. "When You Give Alaskans a Universal Basic Income, They Still Keep Working." *Quartz*, Quartz, 1 Aug. 2018, [qz.com/1205591/a-universal-basic-income-experiment-in-alaska-shows-employment-didnt-drop/](http://qz.com/1205591/a-universal-basic-income-experiment-in-alaska-shows-employment-didnt-drop/).
- Gray, Richard. "Future - How Automation Will Affect You – the Experts' View." *BBC News*, BBC, 23 May 2017, [www.bbc.com/future/story/20170522-how-automation-will-affect-you-the-experts-view](http://www.bbc.com/future/story/20170522-how-automation-will-affect-you-the-experts-view).
- Jones, et al. "The Labor Market Impacts of Universal and Permanent Cash Transfers: Evidence from the Alaska Permanent Fund." By Jikun Huang, Ruifa Hu, Scott Rozelle, Fangbin Qiao, Carl E. Pray :: SSRN, 22 Feb. 2018, [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3118343&utm\\_content=buffer0e9c8&utm\\_medium=social&utm\\_source=twitter.com&utm\\_campaign=buffer](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=3118343&utm_content=buffer0e9c8&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer).
- Kingma, Luke. "Universal Basic Income: The Answer to Automation? (INFOGRAPHIC)." *Futurism*, Futurism, 12 May 2016, [futurism.com/images/universal-basic-income-answer-automation](http://futurism.com/images/universal-basic-income-answer-automation).
- Lant, Karla. "Universal Basic Income: UBI Pilot Programs Around the World." *Futurism*, Futurism, 8 Feb. 2017, [futurism.com/images/universal-basic-income-ubi-pilot-programs-around-the-world](http://futurism.com/images/universal-basic-income-ubi-pilot-programs-around-the-world).
- Manyika, James, et al. "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages." *McKinsey & Company*, McKinsey Global Institute, Nov. 2017, [www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages](http://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages).
- Nickelsen, Trine. "Leading Economists Promote Guaranteed Minimum Income." *Phys.org – News and Articles on Science and Technology*, Phys.org, 3 Mar. 2017, [phys.org/news/2017-03-economists-minimum-income.html](http://phys.org/news/2017-03-economists-minimum-income.html).
- Tognini, Giacomo. "Universal Basic Income, 5 Experiments From Around The World." *WorldCrunch*, 23 Feb. 2017, [www.worldcrunch.com/culture-society/universal-basic-income-5-experiments-from-around-the-world-1](http://www.worldcrunch.com/culture-society/universal-basic-income-5-experiments-from-around-the-world-1).
- Weller, Chris. "8 Basic Income Experiments to Watch out for in 2017." *Business Insider*, Business Insider, 24 Jan. 2017, [www.businessinsider.com/basic-income-experiments-in-2017-2017-1](http://www.businessinsider.com/basic-income-experiments-in-2017-2017-1).
- Zak, Annie. "Study on Universal Basic Income Finds Alaska's PFD Has 'No Effect on Employment'." *Anchorage Daily News*, Anchorage Daily News, 15 Feb. 2018, [www.adn.com/business-economy/2018/02/14/study-on-universal-basic-income-finds-alaskas-pfd-has-no-effect-on-employment/](http://www.adn.com/business-economy/2018/02/14/study-on-universal-basic-income-finds-alaskas-pfd-has-no-effect-on-employment/).