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Haute école de gestion
Genève

**Why did the Swiss electorate refuse the initiative
on Unconditional Basic Income (“UBI”) and what
this vote would suppose for Switzerland in the
future?**

**Bachelor Project submitted for the obtention of the
Bachelor of Science HES in International Business Management**

by

Ricardo DE OLIVEIRA

Bachelor Project Advisor:

Mrs Antoinette ESPOSITO-CANO, Senior Lecturer HES

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Declaration

This Bachelor Project is submitted as part of the final examination requirements of the Haute Ecole de Gestion de Genève, for the Bachelor of Science HES-SO in International Business Management.

The student accepts the terms of the confidentiality agreement if one has been signed. The use of any conclusions or recommendations made in the Bachelor Project, with no prejudice to their value, engages neither the responsibility of the author, nor the adviser to the Bachelor Project, nor the jury members nor the HEG.

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Geneva, August 18th 2017

Ricardo DE OLIVEIRA

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Executive Summary

Working conditions and the work environment have evolved significantly over the last decades. As one of the consequences of automation and productivity gains, working time has decreased, and unemployment has increased since the middle of the XIX century. The portion of the active Swiss population working part time was 4% in 1960, 12% in 1970, 19% in 1990, 29% in 2000 and 34% in 2010¹. What would the job market be like in the post-automation and post-digitalization era?

To answer these questions, the advocates of the popular initiative in Switzerland launched the debate on the Unconditional Basic Income. A UBI is a periodic cash payment unconditionally received by all individuals, without means-test or work obligations. This concept is not new and has been applied before in several countries around the globe with very different results.

This debate led to the proposition of the federal initiative for an “Unconditional Basic Income”. The initiative was submitted to a popular vote on June 5th, 2016 in Switzerland.

Unfortunately for its supporters, the popular initiative was refused by 76.9% of the Swiss electorate. Knowing that Swiss voters were concerned about the increasing unemployment rates and precarious work contracts, this thesis investigates the reasons that led Switzerland to refuse the initiative.

Results obtained from a survey² realized in Geneva, shown that 83.3% of the Swiss electorate is concerned about changes in the work environment. However, the initiative failed to be approved as the proportion of voters supporting the initiative was inferior to 50% of the electorate. Based on this fact, one can conclude that an important share of the population believed in the necessity of a security plan for unemployment but did not support the initiative. Furthermore, it can be concluded that being aware of the changes in the work environment and unemployment issues was not a sufficient reason to vote in favour of a UBI.

¹ STRUB, Silvia Le travail à temps partiel en Suisse. Bern, BASS, Mars 2003. Retrieved 31 Oct. 2016, from http://www.buerobass.ch/pdf/2003/teilzeitarbeit_schlussbericht_f.pdf

² Survey realized in the Canton of Geneva. The results obtained will be used as a proxy for the national results.

Thus, this work proposes that the Swiss population do not believe that giving a lump sum to all citizens is the better solution to fight unemployment and counter arrest the threats of automation.

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Introduction

Based on elements from literature and the press, the first section of this work contextualises the historical and recent arguments that encouraged the discussion on the Unconditional Basic Income.

The second section details the Unconditional Basic Income features and characteristics and the rationale underlying the initiative.

To split voters into categories according to their decision-making process, the third section of this study refers to statistics on results obtained from a survey.

The survey randomly chose 120 people in Geneva, answering a total of 6 questions related to the Unconditional Basic Income³.

The popular initiative⁴ on Unconditional Basic Income (“UBI”) divided opinions among political parties and population⁵. On one side, supporters of the initiative argued that a UBI guarantees access to basic needs, providing dignity, security and allowing people to look for a job not only to survive but to live with more than the strict minimum⁶. On the other side, critics of the initiative claimed that financing the UBI would create financial issues, weaken Swiss competitiveness among its neighbours and decrease people’s willingness to work, with the risk of creating an idle society⁷.

Voters had to choose whether or not to give a UBI to all Swiss citizens. Given the lack of clarity on the future challenges that the Swiss society will face (automation, professional insertion, unemployment, welfare and funding for old-age security) Swiss voters faced contradictory information, which made it difficult to differentiate real factors from misconceptions around the UBI theme.

The difficulties for Swiss voters depended on the benefits and disadvantages of the initiative.

³ Appendix 1 - Methodology and Survey Interpretation and Appendix 4 - Survey Results

⁴ Appendix 2 - The Swiss Political System

⁵ Appendix 3 - Original texts of the initiative

⁶ “*Unconditional Basic Income Swiss Initiative.*” Accessed March 6, 2017. <http://basicincome-initiative.ch/>.

⁷ “Non au Revenu de Base Inconditionnel – RBI.” Accessed March 6, 2017. <http://www.non-rbi.ch/>.

The altruistic goals set by the launchers of the initiative are:

1. To counter arrest the results of automation and the threat of unemployment;
2. To ensure a living income;
3. To provide dignity;
4. To permit choosing one's work;
5. To support real economy and entrepreneurship;
6. To encourage continuous education;
7. To favour and increase time shared with family;
8. To develop creativity.

The disadvantages advocated by the opponents to the UBI are on the contrary as follows:

1. A UBI system removes incentives to work;
2. Creates an idle society;
3. Begs the question of the resources to pay for the UBI;
4. Generates increase in tax and public debt;
5. Generates implementation issues.

On June 5th, 2016, with a participation of 46.95%, the popular initiative was rejected by 76.9% of the voters. Switzerland decided not to give an Unconditional Basic Income to its citizens. What is the meaning of this result? Did it mean that the Swiss population is not concerned about the threat of unemployment caused by automation? Did it mean that Swiss voters believed there will be enough new jobs to absorb all jobs lost in services and manufacture? What if the Swiss voters were influenced by the threat such initiative could cause to the country's economy?

1. Chapter I – Today’s context

1.1 Capital accumulation

Piketty in his book *Capital in the Twenty-First Century*⁸ defines income as being composed by two components: income from labour (wages, salaries, bonuses, earning from nonwage employment, and other labour related compensation) and income from capital (rent, dividends, interest, profits, capital gains, royalties, and other revenues derived from owning capital in the form of land, real estate, financial instruments, etc.).

Modern economic growth and the diffusion of knowledge have made it possible to avoid the collapse of capitalism predicted by Marx - but have not modified the deep structures of capital and inequality (Piketty, 2014: 8).

David Ricardo and Karl Marx were among the most influential economists of the XIX century and both believed that a small social group – landowners for Ricardo, industrial capitalists for Marx – would inevitably claim a steadily increasing share of output and income.

In 1867, when Marx published the first volume of *Capital*, half a century after the publication of Ricardo’s *Principles of Scarcity*, broad changes have affected economic and social realities. The question was no longer whether farmers could feed a growing population or land prices would rise, but rather how to understand the dynamics of the new economic model: industrial capitalism.

The misery of the industrial proletariat was the most striking fact. Despite economic growth, workers crowded into urban slums, primarily due to the vast rural exodus pursuant to population growth and increasing agricultural productivity. Wages were meagre and the working day was long. The new urban misery was more visible and sometimes even worse than the rural poverty of Feudalism.

As evidenced by historical data, it was not before the second half of the XIX century that a rise in the purchasing power of wages occurred. During the first half of the XIX century, wages stagnated at low levels, sometimes inferior to the levels of previous centuries. Until 1914, the economy was marked by increasing concentration of wealth. If it were not for the economic and political shock caused by the world wars, it would be difficult to

⁸ PIKETTY, Thomas, 2014. *Capital in the Twenty-First Century*. London: The Belknap Press of Harvard University Press. ISBN 978-0-674-43000-6.

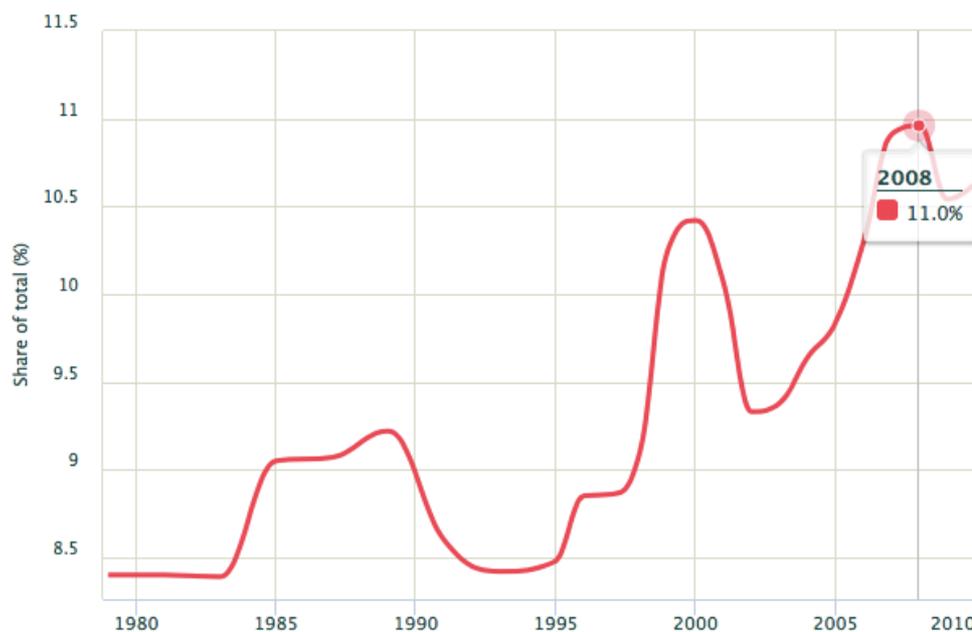
predict where this trajectory of wealth concentration would have gone. In his 2014's book, Piketty says: "the wars were most likely the only forces - since the Industrial Revolution - powerful enough to reduce inequality".

The basis of Marx's and Ricardo's work was an analysis of the contradictions inherent to capitalism. Marx used the model of the cost of capital and the principle of scarcity from Ricardo as the basis of his work on the dynamics of capitalism. Capital being primarily industrial rather than landed property. The difference was that for Ricardo, land was limited, while in Marx's analysis there was no limit to capital accumulation. Marx's conclusion was the "principle of infinite accumulation", which can be explained by the tendency for capital to be concentrated in ever fewer hands.

Contrary to Marx prophecy, wages increased in the last third of the XIX century, with the purchasing power of workers spreading despite extreme inequalities persisting until World War I.

As per the World Wealth and Income Database⁹, even if the fiscal income share of the top 1% dropped in the 70's, it has been increasing since, with visible tops and bottoms before and after the burst of financial bubbles.

Figure 1 - Top 1% fiscal income share for Switzerland

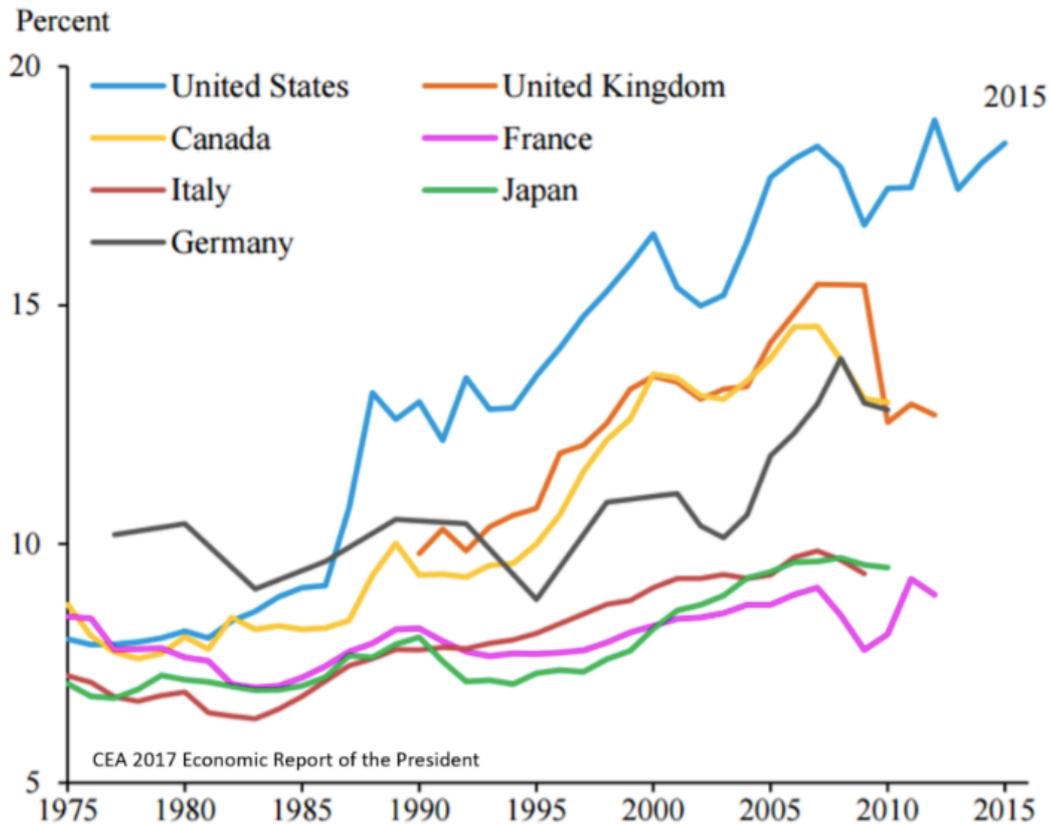


Source: World Wealth and Income Database

⁹ World Wealth & Income Database: <http://wid.world/country/switzerland/>

The same effect is observed in the USA, Canada, Japan and other countries from the EU.

Figure 2 - Top 1% fiscal income share for selected developed countries



Source: World Wealth and Income Database / The White House – Council of Economic Advisers

If wealth inequalities seem to be on the rise again, what could be done to counteract this trend and promote better distribution of social wealth?

1.2 The industrial revolution

In the decades that preceded the Industrial Revolution most of the workforce was employed in agriculture. Either as self-employed farmers and land owners (or tenants) or as landless agricultural labourers. The output of farming grew faster than the population over the XVIII century. The rapid population growth in Europe would not be possible without this increase in food supply. The rise in productivity accelerated the decline of the labour force allocated to agriculture – especially in France and the United Kingdom, adding to the urban workforce on which industrialisation depended (Overton, 1996: 206). The improved agricultural productivity freed workers to go to other sectors

of the economy, the Agricultural Revolution being considered as one of the causes of the Industrial Revolution¹⁰.

The Industrial Revolution marked the transition to new manufacturing processes (from 1750 to 1850). From manual labour to machines (and chemical) manufacturing, the transition was characterised by the increasing use of steam power, the rise of the factory system, the improved efficiency of water power, and the development of machinery. The Industrial Revolution influenced virtually every aspect of daily life. It allowed new manufacturing processes, marking a major turning point in social history. In the transition period between 1840 and 1870, the First Industrial Revolution evolved into the Second Industrial Revolution. During the Second Industrial Revolution, technological and economic progress continued to grow with the increasing use of steam-powered railways, boats and ships¹¹.

With the Industrial Revolution came Scientific Management. Its development began in the United States in the 1880s and '90s within the manufacturing industries. Its peak of influence began in the 1910s (Woodham, 1997: 12). The most influential intellectual – and leader of the Efficiency Movement – was Frederick Winslow Taylor. The Scientific Management (Taylorism) led to an extreme division of work in simple and specific tasks. The workers had become no more than subordinates inside the big mechanical factories. The worker was no longer asked to be creative, but to execute tasks well planned to every single step of production with one main purpose: efficiency. All intellectual work was moved from the factories to the head offices of the organizations.

Henry Ford, using Scientific Management from Taylor, created Fordism. The Fordism was a principle applied to any manufacturing process to improve productivity and reduce production cost. The key features are:

- Standardisation of the product (everything is made from machines and moulds by unskilled¹² workers);
- Assembly lines (using special-purpose tools to allow unskilled workers to contribute to the finished product);

¹⁰ Partially extracted from: https://en.wikipedia.org/wiki/British_Agricultural_Revolution

¹¹ Partially extracted from: https://en.wikipedia.org/wiki/Industrial_Revolution

¹² Unskilled refers to any worker who does not necessarily have a specific craft technique

- Higher wages (workers are paid higher wages, so they can afford to purchase the products they make; consumerism).

The payment of higher wages was probably the most important contribution from Fordism compared to Taylorism.

One of the significant changes to such a strategy was that it deskilled the labour itself. A good example can be found in *Modern Times*, the 1936 epic comedy film written and directed by Charlie Chaplin. In the movie, the character "Little Tramp" (Charlie Chaplin) struggles to make a living out of the industrialised and modern world. The film is a direct criticism of the severe financial/employment conditions (in Chaplin's view created by the modern industrialisation) many people lived during the Great Depression¹³.

Figure 3 - "Little Tramp" in *Modern Times*



Source: Google Images

¹³ CHAPLIN, Charles, 1936. *Modern Times*. United Artists, 5 February 1936.

1.3 Social benefits and waged labour

Waged-labour existed before capitalism, but was long regarded as an undesirable situation. The contribution from Fordism which brings it one step forward Taylorism is that Fordism made waged-labour safe and standardized. Employee subordination became a condition to securitized compensation.

The transition from the wage relationship that prevailed at the beginning of industrialisation to the “Fordistic” payment relationship implies the pairing of certain conditions:

- Clear distinction between the working population and others;
- Clear separation between leisure time and working time;
- Access to new standards of consumption through wages. Taylor was already advocating it, Henry Ford made it a policy (the working class should buy what they produce);
- Labour law which makes the worker a member of a collective working class with social status beyond the individual dimension of the contract of employment.

Paid leave was a substantial change in waged-labour. The worker could have time for recreation for a few days a year like rentiers and the bourgeoisie. Wage earning ceased to be an unworthy condition. Other professionals such as engineers and bankers claimed to be employees. With the creation of the employee status, the service sector was born.

A “salaried middle class” gradually emerged and expanded in the 1950’s (civil service, technicians and executives).

The development of this wage society depended on economic growth and redistribution. Assuming that there is growth, the social compromise rests on sharing the fruits of it.

Perhaps the most troubling feature of today’s situation is the re-emergence of workers without work, as the “vagabonds” of the middle of the XIV century. The vagabond is a pure employee in the sense that he possesses only his limbs as wealth. A parallel can be made with Étienne Lantier, one of the protagonists of Émile Zola’s novel, *Germinal*. Etienne is a young migrant worker who arrives at a coal mining town in the north of

France to earn a living as a miner. Etienne's only source of revenue is to rent his "human force (labour)"¹⁴.

The evolution of the social security system has tried several formulas to address the issue of unemployment. With the rise of such an issue, what is the solution in a time where the rules of international competition have changed?

1.4 The evolution of the working time

Working hours diminished from the mid-XIX century, not in parallel with productivity growth, but in steps and sometimes situations of unrest. In general, employers preferred increasing wages than reducing working time or extending paid holidays.

Working hours were often described in the past as including long lunch breaks. Discussions among employers were frequent to decide whether short breaks, cleaning, personal hygiene, etc., should be included in working time.

Figure 4 – L'Angelus, Jean François Millet



Farmers stop working to pray when they hear the bells from the Church – Source: Google Images

¹⁴ Partially extracted from Wikipedia: [https://en.wikipedia.org/wiki/Germinal_\(novel\)](https://en.wikipedia.org/wiki/Germinal_(novel)) and from ZOLA, Emile, 1993. *Germinal*. Penguin Books. ISBN 978-0-451-51975-7

In the XIX century, working hours became an essential question for the industrial society in Switzerland. Like church bells, clocks became very important to mark working hours and to distinguish working time from leisure time. With the mechanisation and division of work tasks, defined working hours provided a comparison among workers and helped to unify the labour market.

At the beginning of industrialisation, some entrepreneurs extended working hours to make the most of their investments (e.g. machinery tools). The number of public holidays shrunk and the practice of “Lundi Bleu” (not working on Mondays) was retracted. Thanks to the clock, the distinction between work and leisure became clearer and the measure of time more precise. However, measuring time did not come without resistance. One of the first strikes of factory workers (canton of Glarus, 1837) related to a bell that pointed the beginning and the end of work.

Until the half of the XIX century, working time was longer in factories than in workshops. In 1848 the canton of Glarus fixed a law of 15 hours per day at the spinning mills. In the middle of the XIX century, workers looked for unification and a reduction of working hours. By the 1870's most of the Swiss cantons changed to an 11-hour working day (loi fédérale sur les fabriques)¹⁵. The typographers were the first to have an 8-hour working day in 1901.

After World War I, several industrialised countries reduced working hours, and after World War II syndicates continued working on wage issues and working time. Working hours evolved and on average were 44 hours per week in 1963, 44.7 hours per week in 1970, changing to 41.6 hours per week in 2010¹⁶.

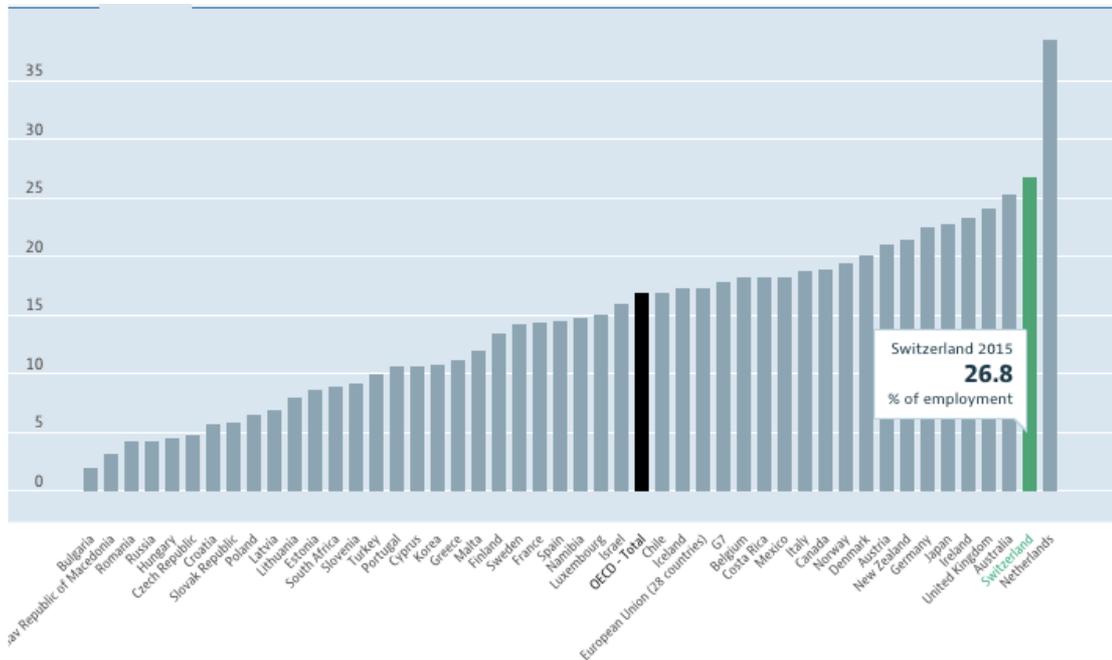
Working time has decreased since the middle of the XIX century. However, now it is not the result of the quest for better working conditions, but a result of economic profitability and automation.

¹⁵ Histoire de la Sécurité Sociale en Suisse:
<http://www.histoiredelasecuritesociale.ch/synthese/1877/>

¹⁶ Bernard Degen, "Durée du travail", in Dictionnaire historique de la Suisse (DHS), version of 26.11.2012 (translated from french), url: <http://www.hls-dhs-dss.ch/textes/f/F13910.php>

Among OCDE countries, between 2000 and 2013, the percentage of temporary employment went from 14% to 17%¹⁷. Switzerland is the second country in the list (26.8%), just behind Netherlands.

Figure 5 - Part-time employment rate OCDE



Source: OCDE

In France, 87% of the active population had a permanent contract in 2012. According to the unemployment office, in 2016 permanent contracts represented only 36% of hiring intentions, against 20% for six-month contracts, and nearly 44% for temporary employment¹⁸.

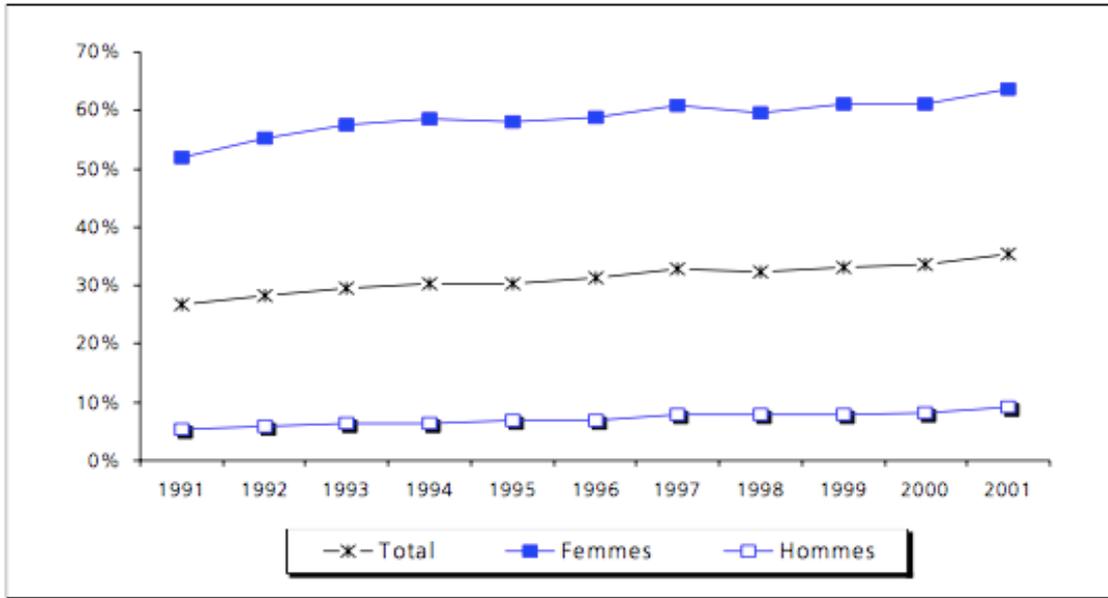
According to the University of Bern, the portion of the active Swiss population working part time was 4% in 1960, 12% in 1970, 19% in 1990, 29% in 2000 and 34% in 2010 (women accounting for 78%)¹⁹.

¹⁷ OCDE: <https://data.oecd.org/fr/emp/taux-d-emploi-a-temps-partiel.htm> - indicator-chart

¹⁸ Pole-emploi: <http://statistiques.pole-emploi.org/bmo/static/bmoenquete2016>

¹⁹ STRUB, Silvia Le travail à temps partiel en Suisse. Bern, BASS, Mars 2003. Retrieved 31 Oct. 2016, from http://www.buerobass.ch/pdf/2003/teilzeitarbeit_schlussbericht_f.pdf

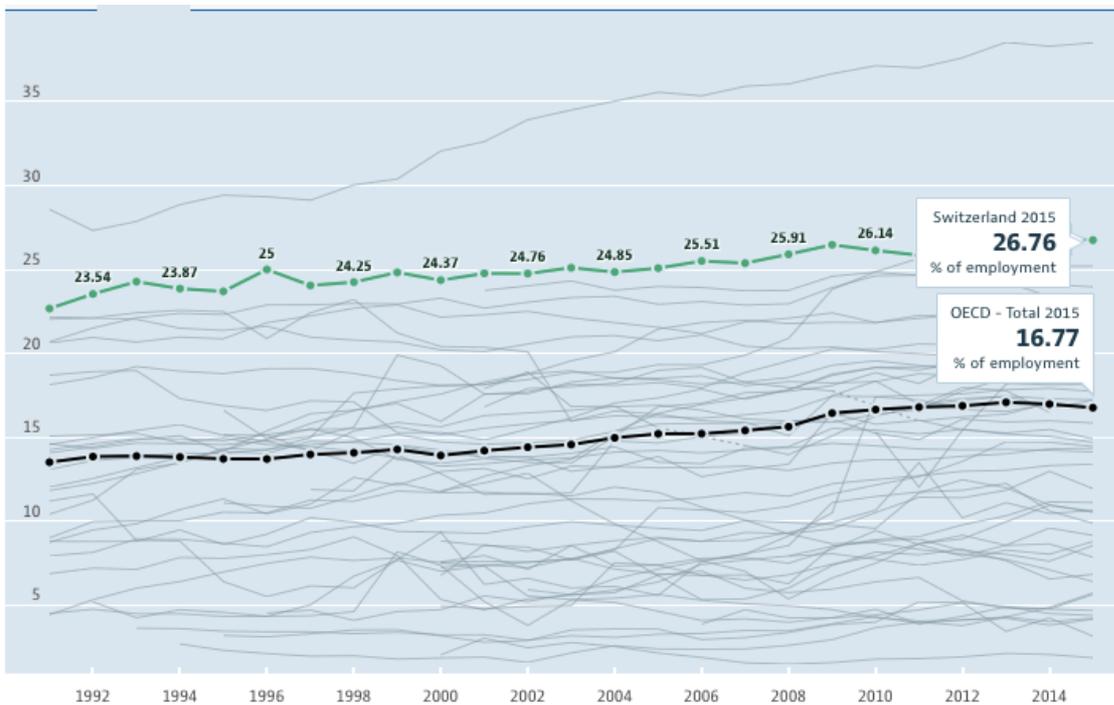
Figure 6 - Part-time rate evolution for men and women, 1991-2001



Source: University of Bern, ESPA 1991-2001

These numbers vary slightly depending on the source. The OCDE relates to the same evolution as being 22.68% in 1991, 24.36% in 2000, 26.14% in 2010 and 26.76% in 2015.

Figure 7 - Part-time rate evolution OCDE countries



Source: OCDE

With the evolution of part-time jobs, a new category came up: the underemployment. A class regrouping available part-time employees for working more often but without access to the job market. Employment contracts are becoming shorter and disposable²⁰.

If permanent contracts are becoming less and less available, what could be done to counteract the rise of underemployment?

1.5 Work and employment, two different concepts?

Bernard Stiegler, in his 2015's book "*L'emploi est mort, vive le travail!*", makes a clear distinction between "worker" and "employee". For Stiegler, after the Industrial Revolution, "worker" and "employee" became two separate concepts. "Worker" is the craftsman who produces a final product from the beginning until the end, who makes it unique. Work is what cannot be automated, as it is the output of human intelligence; creativity is a human trait artificial intelligence cannot replicate. A worker who has a real knowledge produces differentiation and diversity. On the other hand, the "employee" is the one who rents his working time. He/she uses it to perform a single task in the production chain, without being directly responsible for the creation of a final product, in exchange for compensation and, before the rise of precariat and underemployment, the security of a permanent job.

"Work" is the expression of knowledge. With the transfer of execution to a machine at the beginning of the XIX century, workers became only the actors of a task in the hope of getting a salary in compensation (Stiegler, 2015: 43).

Pierre-Yves Gomez in his book "Intelligence du Travail" published in 2016, states that work is something that emancipates, even for low skilled positions.

Simone Weil, in one of her experiences as a factory worker concluded: "Although work is always constrained by necessity, it is at the same time the source of a commitment and a surpassing of oneself"²¹.

The analogy can be made with Jacques Lantier, the main character of Émile Zola's novel *The Beast Within* (1890). He is the brother of Étienne Lantier as referred to earlier in this study from the novel *Geminal*. Jacques suffers from a hereditary madness (he has several times wanted to murder women). It is interesting to note that he named his engine

²⁰ STANDING, Guy, 2014. *The Precariat: The New Dangerous Class*. Bloomsbury Academic. ISBN 978-1-4725-3616-7.

²¹ WEIL, Simone, 2017. *Journal d'Usine*. France: Mercure de France. ISBN 2-7152-2195-9.

(as if it were a woman, or a wife) "La Lison". His relationship with "La Lison" provides him control over his mania but also evidences the strong correlation between worker and machine, how the machine makes the worker more human and how in return the worker brings to the machine a portion of humanity.

Both examples from Zola, (the character of Jaques in *The Beast Within* - and the love he feels for his locomotive - or the mining workers in *Germinal*) are good examples that humankind can be emancipated through technical skills of the machine even in low skilled and painful jobs. Simone Weil described this very well when she showed the dignity of the worker and how they feel respect for their equipment²².

1.6 Consumerism

Since "employees" had no longer the satisfaction of their accomplished work, new forms of satisfaction have been introduced. The most common among them being leisure and consumerism.

Mass production allowed by Fordism and Taylorism lowered unit prices, making goods affordable for the average consumer. The rise in wages proposed by Ford gave the means for workers to become consumers. Workers are no longer merely producers, but also and more than anything, the final users of the goods they produce. Supply creates Demand.

After being a consumer, the worker also became in the second half of the XX century an investor²³. His savings are invested in view of postemployment benefits and compensation on saving plans, which enabled the boom of the financial sphere and the supremacy of the investment and banking industry.

By 1980 the first disposable photo camera appeared, and it was the beginning of the marketing hegemony. In the consumerist era, the producers and shareholders think mostly about the short-term benefits, and the consumers are motivated by obtaining the buying power to consume more.

This economic phenomenon has created the innovation race where big corporations compete among themselves not only for market share but also for financing sources and

²² WEIL, Simone, 2017. *Journal d'Usine*. France: Mercure de France. ISBN 2-7152-2195-9.

²³ GOMEZ, Pierre-Yvez, 2013. *Le travail invisible: Enquête sur une disparition*. François Bourin Editeur. ISBN 2-84941-360-7.

capital investment. They must be attractive for employees, who are the ones who consume their products and also invest their saving in their share and debt instruments through saving plans and financial products. The increase in productivity will lead to an increase in supply, which will increase growth, demand and consumption. Stock returns will consequently increase, which will encourage investment and innovation (automation).

With consumerism came the promise of full employment and infinite growth, which worked well for around 30 years. But with the division of work and standardisation, this mechanic repetition made some jobs desirable only through the glasses of the growing threat of unemployment.

Now with the rise of unemployment and precariat, what could be done to distribute the increasing return on capital allowed by investment and innovation, and to allow stable levels of demand (consumption)?

1.7 Automation, unemployment and underemployment

The innovation race and productivity yield improvements generated growing levels of automation.

Since the beginning of the first industrial revolution, technological innovation – from steam engines and electricity to assembly lines and computerization – has brought about significant changes, not least in the world of work. “At the beginning of the XIX century, almost 70 per cent of Swiss employees worked in agriculture and 8 per cent in the service sector. Just over 200 years later, the situation has been reversed, with only 3 per cent of all employees working in agriculture and 75 per cent in the services sector”²⁴.

A Deloitte study²⁵ based on research conducted by the University of Oxford²⁶ showed that in 20 years, 48 per cent of all Swiss jobs could in principle be automated. It demonstrates the scale on which jobs could be taken over by machines and robots

²⁴ Deloitte (2016): The workplace of the future. How digital technology and the sharing economy are changing the Swiss workforce
<https://www2.deloitte.com/content/dam/Deloitte/ch/Documents/consumer-business/ch-cb-en-the-workplace-of-the-future.pdf>

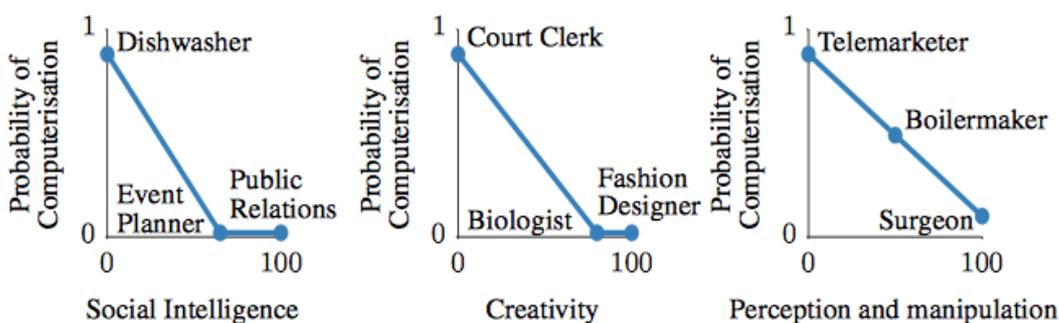
²⁵ Deloitte (2015) : Man and machine : Robots on the rise? The impact of automation on the Swiss labour market
<https://www2.deloitte.com/content/dam/Deloitte/ch/Documents/innovation/ch-en-innovation-automation-report.pdf>

²⁶ The future of employment : How susceptible are jobs to computerisation?
http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

because of their profile. This study considers only the potential for actual job losses rather than the impact on total employment. The automation which violently hit the industrial sector (the 80s in the UK and the US, the “de-industrialisation” policy in France) now threatens services (e.g. algorithms ensuring rational investment decisions in banking services; record keeping, which is the first practice profession which is expected to disappear in the coming decades).

As suggested in the below Figure, required lower degrees of social intelligence makes job positions more likely to be computerised and automated than specialised tasks, a dishwasher vs. a public relation specialist for example.

Figure 8 - A sketch of how the probability of computerisation might vary as a function of bottleneck variables



Source: (Frey; Osborne, 2013)

In 2014, Bill Gates declared that in 20 years – the time needed in his opinion for automation to take its full scale – employment will be marginal²⁷. How could an economic system that is based entirely on automation work? Will it be necessary to replace the salary-based productivity gain redistribution with a new redistribution system based on universal income?

The Scientific Management broke down work by a division of tasks, transforming the workers into automates. Here again, a good example can be found in the first half of Charles Chaplin’s *Modern Times*²⁸. These same workers that were transformed in “automates” in Chaplin’s movie are nowadays replaced by automates in the literal sense.

²⁷ Business Insider <http://www.businessinsider.com/bill-gates-bots-are-taking-away-jobs-2014-3>

²⁸ CHAPLIN, Charles, 1936. *Modern Times*. United Artists, 5 February 1936.

Taylorism and the division of work, allowed levels of automation never seen before. With automation comes the creation of new jobs and the destruction of others. Nowadays, work is extremely divided to the extent that companies no longer need workers. It is easy to replace these same workers by robots and algorithms. The division of work removed the purpose of the task and this could be the reason why this same task is so well suited for a machine. More and more metros and farm tractors run by themselves. Soon road trucks and taxis will do the same. Mercedes and other car manufacturers make their engines automated. Amazon decided to automate its warehouses²⁹. Supermarket cashiers are disappearing. Robotic bricklayers will soon be introduced to construction sites replacing two to three human construction workers each. Machines need less and less handling.

Here is an actual example: In North West Australia, in the Pilbara region, driverless trucks cross the West Angelas Mine, owned by the mining giant Rio Tinto. These are autonomous vehicles “Lomatsu 930-E-AT”. No miner (and almost no worker) is present on site to extract the annual quantity of 29.5 million tonnes of iron ore. Everything is managed remotely, 1300km South, in Perth. 400 employees are piloting 15 mines, 31 wells, four ports and 1'600 km of rail-network^{30,31}.

In the Guangdong province, South-East China, in one of the assembly lines of electronics giant Foxconn, automation has permitted the reduction of workforce from 20 to 30 employees to only 5. Just enough to operate the machines³². Between September 2014 and May 2015, more than 500 factories around Dongguan (an important industrial city in central Guangdong province) invested nearly Euro 573 million in robots, with the objective to replace approximately 30'000 workers³³.

Those examples may encourage other factory owners to do the same, and by consequence bring the “entry cost” of automation down.

²⁹ Amazon has now 45'000 robots in its warehouses <http://uk.businessinsider.com/amazons-robot-army-has-grown-by-50-2017-1>

³⁰ Rio Tinto's Mine of the Future™ <http://www.riotinto.com/australia/pilbara/mine-of-the-future-9603.aspx>

³¹ Rio Tinto's mine without minor <http://www.lesaffaires.com/secteurs-d-activite/ressources-naturelles/rio-tinto-experimente-la-mine-sans-mineur/568152>

³² Foxconn's Foxbot army <http://www.scmp.com/tech/innovation/article/1829834/foxconns-foxbot-army-close-hitting-chinese-market-track-meet-30-cent>

³³ Pearl River Delta : Rise of Robots <http://www.scmp.com/lifestyle/technology/science-research/article/1754165/robotics-industry-booming-guangdong-insiders>

Accountants, financial analysts, inventory managers and even movie stars (Peter Cushing's digital resurrection in Star Wars: Rogue One)³⁴ are being replaced by robots and algorithms, and the list is long. In summary, besides some specific sectors, companies need fewer and fewer employees.

Figure 9 - Peter Cushing's digital resurrection in Star Wars: Rogue One



Source: Google Images

Additionally, automation has permitted the agents acting on the Supply side of the market to have all sorts of tasks executed by the consumer. At SBB in Switzerland, for example, the automate makes the user “work” in front of the machine to buy their travel ticket. This is maybe the core feature of the e-commerce business model.

Few individuals show nowadays sufficient political courage to acknowledge that the digital revolution may severely harm employment in a very short time horizon. However, there is an obsession today about employment. This type of behaviour could be explained by the fact that it is not very popular to claim that full employment societies may be disappearing and that the redistribution of income by the industrialised world in the form of salaries is disappearing because of automation.

In nowadays society unemployment rates continue to grow, and permanent contracts are replaced by fixed-term contracts and part time jobs. Is it the edge of a new paradigm? Is there a new economic model to be invented?

³⁴ What Peter Cushing's digital resurrection in « Star Wars : Rogue One » means for the industry <http://variety.com/2016/film/news/rogue-one-peter-cushing-digital-resurrection-cgi-1201943759/>

When the Industrial Revolution brought the first machines to replace people in the XVII and XVIII centuries, workers were afraid of losing their jobs. It can be observed that today this did not happen. The Industrial Revolution created other types of industrial sectors and market segments. What is going to happen in the future is hard to predict. Most probably, several manufacturing jobs will be lost and replaced by machines similar to the way that most jobs were lost in the agricultural sector when the first machines were operated. People moved from agriculture to manufacturing, and now people is moving from industry to services. The question is, are we going to have enough jobs in services for the entire population? And what about services now being automated, in which sector are we going to work?

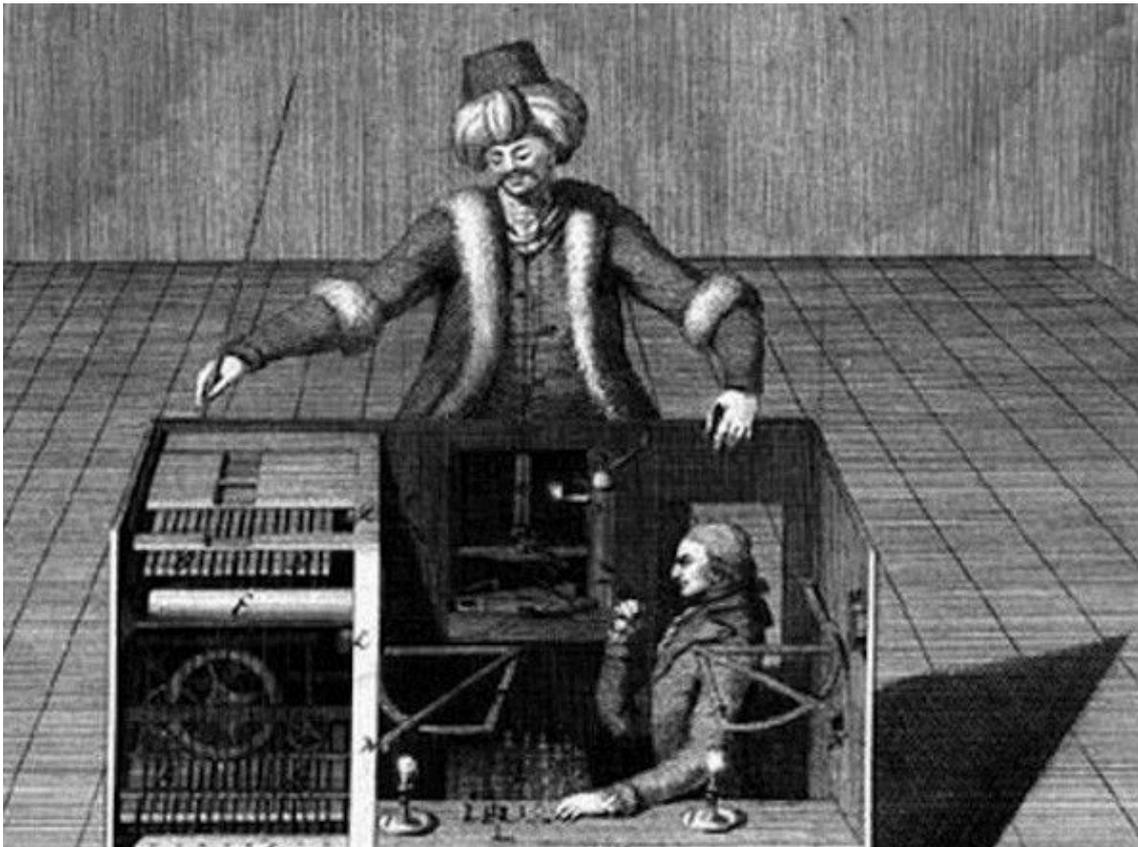
Ten years ago, nobody would think about someone who would come and organise your clothes, or bring your shopping; these jobs did not exist. But not all new jobs are “fancy” new jobs. Among these “new services”, probably the most controversial is “human computing”. All kinds of people in front of their computers, performing repetitive micro tasks (labelling, indexing images by number, or massive clicking “like” on the Facebook page of a brand), paid poorly, with little or no social and work rights.

One example of human computing is the Amazon Mechanical Turk (artificial artificial intelligence, as called in their website). The MTurk is a marketplace for work that requires human intelligence. The Mechanical Turk service gives businesses access to a diverse, on-demand, scalable workforce and gives workers a selection of thousands of tasks to complete whenever it's convenient³⁵. Because tasks are typically simple, repetitive and users are often poorly paid, some have criticized Amazon for exploiting and not compensating workers for the true value of the task they complete. Amazon received critics that the MTurk marketplace does not have the ability for the workers to negotiate with the employers. In 2014 the Nation magazine said that some employers had taken advantage of workers by having them do the tasks, then rejecting their submissions in order to avoid payments³⁶.

³⁵ Amazon Mechanical Turk <https://www.mturk.com/mturk/help?helpPage=overview>

³⁶ How Crowdworkers Became the Ghosts in the Digital Machine <https://www.thenation.com/article/how-crowdworkers-became-ghosts-digital-machine/>

Figure 10 - Human computing, The Mechanical Turk of Amazon



- Source: Google Images

The question to be raised now is the following: How many of those “new services” will exist in the future? Will they be enough to absorb all automated jobs?

The actual welfare system only operates through the glasses of employment. If employment disappears, what would be the consequences on the welfare system?

“Do the dynamics of private capital accumulation inevitably lead to the concentration of wealth in ever fewer hands, as Karl Marx believed in the XIX century? Or do the balancing forces of growth, competition, and technological progress lead in later stages of development to reduced inequality and greater harmony among the classes, as Simon Kuznets thought in the XX century?” (Piketty, 2014: 8)

To start the discussion about the UBI, people may need to start thinking about the separation of income from work. Parenting, looking after sick and elderly members of a family, volunteering, arts, culture, they all have an impact in contributing to our society, but typically do not attract an income.

Some people believe that giving an Unconditional Basic Income to every single individual in the society is the first step to fix the existing structural economic crisis.

2. Chapter II – The unconditional basic income

2.1 The Unconditional Basic Income³⁷

The automation and the crisis of employment sound as bad news. However, the challenge should be faced on a more positive way. Could not it be the premise of a new form of economy or society? A society in which each member would have the means to create value.

To face the challenges listed in Chapter 1, should all systems of social help and subventions be replaced by a UBI given from birth, in the name of the right to live decently? Revenue that would allow people to freely choose their occupation, prioritising personal accomplishments, or simply to earn more money?

As per Enno Schmidt (one of the launchers of the UBI initiative)³⁸, “a basic income, is an income for the basic needs”. And as basic needs, it is necessary to give it to everyone. Given free, basic and unconditionally to everybody. Independent of occupation, employment, or social status. It is focused on individuals and not on circumstances or functions.

It would be a regular payment to everyone as a right. It would eliminate the bureaucratic process of people having to go to agencies and fill out forms “just to put food on their tables”.

A basic income has at least the five following characteristics:

- It is individual;
- It is periodic: paid at regular intervals;
- It is a cash payment: it is paid in a medium of exchange that allows those who receive it to decide in what they spend it;
- It is universal: given to all, without means test or circumstances;
- It is unconditional: paid without condition. No requirement to work, to demonstrate willingness-to-work, to have worked previously or not to have conditions to work.

³⁷ Partially extracted from Basic Income Earth Network (BIEN): <http://basicincome.org/basic-income/>

³⁸ Enno Schmidt https://de.wikipedia.org/wiki/Enno_Schmidt

There is no Basic Income formula. A large variety of Basic Income proposals are circulating today varying in many dimensions; including the amount distributed, the source of funding, the size of reductions in other social benefits that might accompany it, and so on.

Regarding the pilot experiments, they also vary widely, some of them not being considered as purely Basic Income³⁹.

A UBI could improve efficiency and empower communities. Among many reasons, the benefits of a Basic Income include liberty and equality, an equal share of the benefits of technical progress, the dignity of the poor, the fight against inhumane working conditions and inter-regional inequalities, the promotion of adult education, the flexibility of the labour market and autonomy.

The Basic Income should be high enough (or be part of a project) to eliminate material poverty and enable the cultural and social participation of every individual. To do so, it should be stable in frequency and size. Defining how high is high enough to eliminate material poverty is a controversial subject among Basic Income supporters.

Another controversy among Basic Income advocates is whether a full Basic Income could replace social policies.

In the last 20 years, activism for Basic Income has increased considerably. Also, many European economists and social scientists have now demonstrated their support to it – among them Yanis Varoufakis, a Greek economist, academic and politician, who served as the Greek Minister of Finance.

At the same time, the relevant literature on the economic, ethical and political aspects is gradually expanding, and those promoting the idea have started organising themselves into an active network⁴⁰.

Unemployment and underemployment issues are becoming difficult to face with conventional means. Social policies and economic policies can no longer be regarded as separate and opposite matters and must be thought jointly. A Basic Income is

³⁹ The entire text from the Basic Income Network on examples of UBI pilots can be found in Appendix 7 and: <http://basicincome.org/news/2017/05/basic-income-experiments-and-those-so-called-early-2017-updates/>

⁴⁰ Basic Income Earth Network – BIEN <http://basicincome.org/>

increasingly viewed as a way of reconciling social and economic central objectives: full employment and poverty relief.

2.2 The history of Unconditional Basic Income⁴¹

The idea of a UBI has many historical roots. The thought of a minimum income exists since the beginning of the 16th century. In the 18th century came the idea of an unrestricted one-off grant. Both were combined for the first time to form the concept of an Unconditional Basic Income near the middle of the 19th century.

With the Renaissance, welfare for the poor ceased to be regarded as a duty of the Church and generous individuals and begun to be considered as a function of the State.

Juan Luis Vives in “*De l’Assistance aux pauvres (1526)*” worked out a detailed scheme and developed a comprehensive argument for UBI. He proposed that the local government should be held responsible for securing a minimum subsistence to all its residents. The assistance scheme would be targeted at the poor. It was based both on theological and pragmatic considerations⁴².

In Utopia, Thomas More’s novel published in Leuven in 1516, the Portuguese traveller Raphael Nonsenso, reported a conversation he had with the Archbishop of Canterbury John Morton:

“I once happened to be dining with the Cardinal when a particular English lawyer was there. I forgot how the subject came up, but he was speaking with enthusiasm about the stern measures that were then being taken against thieves. ‘We’re hanging them all over the place’, he said. ‘I’ve seen as many as twenty on single gallows. And that’s what I find so odd. Considering how few of them get away with it, how come we are still plagued with so many robbers?’ ‘What’s odd about it?’, I asked – for I never hesitated to speak freely in front of the Cardinal. ‘This method of dealing with thieves is both unjust and undesirable. As a punishment, it’s too severe, and as a deterrent, it’s quite ineffective. Petty larceny isn’t bad enough to deserve the death penalty. And no penalty on earth will stop people from stealing if it’s their only way of getting food. In this respect, you English, like most other nations, remind me of these incompetent schoolmasters, who prefer

⁴¹ Partially extracted from Basic Income Earth Network (BIEN): <http://basicincome.org/basic-income/history/>

⁴² Juan Luis Vives, *De l’Assistance aux pauvres (1526)*, French translation by Ricardo Aznar Casanova, Brussels : Valero et Fils 1943.

canning their pupils to teaching them. Instead of inflicting these horrible punishments, it would be far more to the point to provide everyone with some means of livelihood, so that nobody's under the frightful necessity of becoming, first a thief, and then a corpse" (More, 1963: 43-44).⁴³

Abraham Lincoln called for the National Homestead Act of 1862. Almost 720,000 homesteads were established under the law, and properties continued to be available in some states until the early 1900s. It granted 160 acres of public land to any head of a family who resided upon the land and cultivated it for five years.

In the XX century, the discussion about basic income was unusually intense. Under names like "social dividend", "national dividend" and "state bonus", proposals for a universal and unconditional basic income were developed and debated in the United Kingdom. Later they were also featured in discussions about "negative income tax" schemes during the 1960s and 70s in the United States. Then, basic income proposals were actively discussed in several countries in North-Western Europe from the late 70s and early 80s.

2.3 The basic income initiative in Switzerland

The proposers of the initiative opened the space for discussion with a text of only a few words⁴⁴. The most striking fact being the sum of money given to each individual. A hypothetical sum of CHF 2'500.00 for every adult and CHF 625.00 for every child was suggested. However, the confederation was free to decide the amount and whether it would replace all social assistance or part of the existing system.

2.4 An instrument of freedom

This section will briefly discuss some arguments used by the advocates of the initiative, in favour of the UBI.

What if instead of having to work, people were free to work? What if work was not the only income channel so that it was a free choice to work?

⁴³ Thomas More, *Utopia* (1st Latin edition, Louvain, 1516), English translation by Paul Turner, Harmondsworth: Penguin Classics, 1963.

⁴⁴ Appendix 3

Some people believe that having to work as an obligation to secure money for our living, is one of the biggest delusions of our time.

Part of the citizens interviewed (62%) relied on the fact that with a UBI they would be able to start a change in their career, while only 8% would stop working⁴⁵.

Advocates of the initiative argue that people often forget that money may not be the only true motivation to work. People are driven by interests, social recognition, social integration, self-fulfilment, or simply to have fun.

People who participate in any kind of voluntary work often get asked: “Do you get paid to do it?” Most of these people do not but almost all of them do it because they want to (and because they can afford to). A student who needs to work 15, 20 or even 30 hours per week, often does not have the time or the energy to participate in student associations, junior enterprises, etc. When Steve Jobs, back in 1976, co-founded Apple with Steve Wozniak in his parents’ garage, he was not wealthy. But he had all the appliances and tools he needed, so he could focus his time and energy in creating the first Apple computer. If Steve Jobs had to work 30 hours per week to survive, he might not have founded Apple, and we may have never heard about iPods and iPhones.

On the one hand, a UBI would allow people to accept some interesting, exciting and fulfilling jobs that are not viable now, that they could not take because they pay too little or do not pay at all. With a UBI system, these types of jobs would be viable because they provide satisfaction, training, and experience. These jobs would allow people to obtain better positions with the experience acquired during this period. On the other hand, it would enable people to say no to particular jobs - jobs that have no personal significance to them – unless the salary was higher. As a result, a variety of jobs will become possible, and these undervalued situations will develop because they are meaningful in themselves but not always well exploited. Teaching and nursery are examples of the highest qualitative and socially valuable positions, but are often poorly paid.

A basic income would allow people who work too much, to reduce their working time, to interrupt their career for a while with fewer complications.

It would also help people that are excluded from active society to get to these jobs, partially because they are left open from people that reduce their work load, and partially

⁴⁵ Chapter 3 and Appendix 4

because they would be able to combine this part time employment with other activities that are important to them.

The UBI could be related to the tale about the man who built his house upon the rock, and the man who built his house upon the sand. And when the rains came down, and the floods came up it was the house on the rock which stood firmly. Would an Unconditional Basic Income be the best way to allow people to flourish by giving them solid foundations on which to build their lives?

Supporters of the initiative said that freedom is not always doing whatever you want, but being able to say no to things you do not want. No one should be forced to do something for a living. By providing the basic needs to someone, his work that is so necessary, will become valuable and appreciated.

2.5 Arguments against an unconditional basic income⁴⁶

This section will briefly discuss some arguments used by the opponents of the initiative.

Giving CHF 2'500.00 per month to each adult individual in Switzerland and CHF 625.00 per month to each minor would represent approximately CHF 208 billion per year for the Swiss confederation.

- As workers and tax payers will finance the UBI, only the people without revenue or those who earn less than CHF 2'500.00 would benefit from the Basic Income. The remaining citizens would be only funding the system;
- Part-time workers whose salary is close to CHF 2'500.00 will stop working. Workers who have full-time jobs will reduce their working time. This situation puts in danger the whole employment and redistribution system, which also depends on the revenues generated by workers;
- The Federal Council estimated that after reassignment of social security CHF 25 billion would still be missing every year. As a source of financing, it would be inevitable to increase taxes. For instance, if VAT had to finance such an amount it would be necessary to increase it from 8% to 17%;
- It would reduce the quality and quantity of work. Being a country that is not rich in commodities, the Swiss economy relies heavily on work, entrepreneurship,

⁴⁶ Le 5 juin, RBI non <http://www.non-rbi.ch/arguments/>

innovation and dynamism. The introduction of a UBI would affect the work dynamics. With fewer workers and with those who will stop working full time, the entire system would be put into jeopardy, leading to less efficiency, less buying power and fewer tax receipts;

- With the introduction of a UBI, taxes and labour costs would increase. Combined with the high wages paid in Switzerland, the country would lose competitiveness, obliging the existing companies to close or move to neighbour nations;
- In the system imagined by the launchers of the initiative, the individual is placed from birth under the perfusion of the state, which would have to distribute more and more wealth while it would perceive less and less. The standard of living would fall to the point where it would be necessary to rebuild everything;
- The Swiss social system, which has taken decades to build, works well and has proved its worth, would be destroyed. The new scheme would eliminate certain benefits while maintaining others, which in no way represents a simplification of the system.

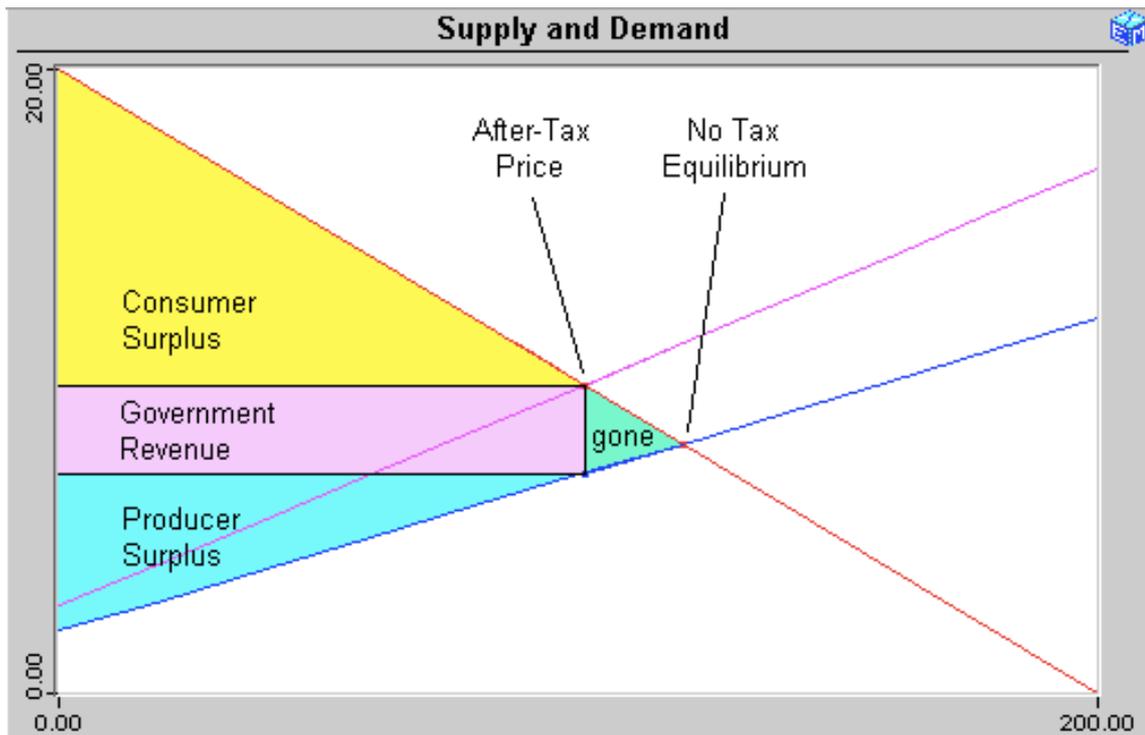
2.6 Financing, drawbacks and short-term economic consequences

Giving the same amount of money to all would create economic distortions which would be hard to predict.

The confederation would need to raise the money for the UBI. Among all options, those that quickly come to mind are: increase in taxes or increase in debt.

- Economically speaking, taxes increase distortions, creating deadweight loss;
- Increasing taxes would also make Switzerland less competitive when compared to its neighbours;
- By increasing debt, the country should address sustainability issues. Switzerland is known as a stable economy with controlled debt. For most of the industries that operate on that basis, this increase in debt could be perceived as a change in the Swiss economic model.

Figure 11 - Deadweight Loss on Taxation⁴⁷



- Source: Google Images

Giving income to everyone will have income effects on the supply side of the labour market. In summary, as individuals, we provide our work to corporations.

- Economically speaking, two major effects are observed to an increase in wages:
 - o Before, instead of staying home, or going to the cinema (leisure), a worker will be giving priority to go to work to earn more money;
 - o After making more money, workers would want to have more leisure time, and to do so, would prefer to work less.

By giving lump sums, the labour supply does not have these two effects. Theoretically, it only has the second one, "now that you are richer, you are going to work less". It would open the "box" for a situation that is not known. The effects on people's willingness to

⁴⁷ The deadweight loss is the area of the green triangle. It is sometimes called Harberger's triangle. The area represented by the triangle comes from the virtual change in the supply curve so the consumer surplus and the producer surplus are cut short. The loss of such surplus is the deadweight loss. The difference between the initial Total Surplus minus the after tax Total Surplus minus the Deadweight Loss is the Tax Revenue perceived by the Government.

work are hard to predict. Maybe, they would still work or not work at all. People that work would be paying basic income for those that are not working.

Companies that still require people for their workforce would need to pay higher wages to convince people to come to work when they do not necessarily need to. It could penalise labour intensive industries when compared to those who can rely heavily on automation. It could also create incentives for companies to increase further their investments in automation - creating even fewer jobs.

Another point that should not be neglected (and that has been raised by the sample of voters during the survey) is the implementation issue. An Unconditional Basic Income should be given to all regardless of their actual situation. What about those people that are not born in Switzerland, but are part of the active population whether they work or not? Should it be given to everyone? Should it be given after five years? Or should it be progressive (at year one 20%, after two years 40%, and so on)? It could bring discrimination among those who have been in the country for more (or less) than five years. The coordination of implementation would not be easy to address.

The possible drawbacks of the adoption of an Unconditional Basic Income are listed below:

- The distortions created by the taxes or the increase in debt;
- The adverse effects on the willingness of people to supply labour;
- Implementation issues;
- It would solve some inequalities and provide dignity, but could also remove incentives for people to progress and innovate;
- It would impose a psychological change. If you do nothing and still get money for it, would you feel good about it?

3. Survey questions and results

This chapter is based on the possible reasons that led to the refusal of the initiative and the effects it would suppose to the labour supply. Some assumptions were made to analyse the situation.

A survey carried out in Geneva, had 120 randomly chosen people answering several questions that will be investigated in detail in the following subchapters.

3.1 Labour supply

The first part of the survey was intended to challenge the central argument of both parties regarding the changes in labour supply.

Advocates of the initiative argue that a UBI would free people from the obligation of working to provide their basic needs. A UBI would allow people to change their occupation, doing something where they would be more motivated, creating more value for society. It would also enable citizens to reduce their working hours, allowing more people to join the active labour force.

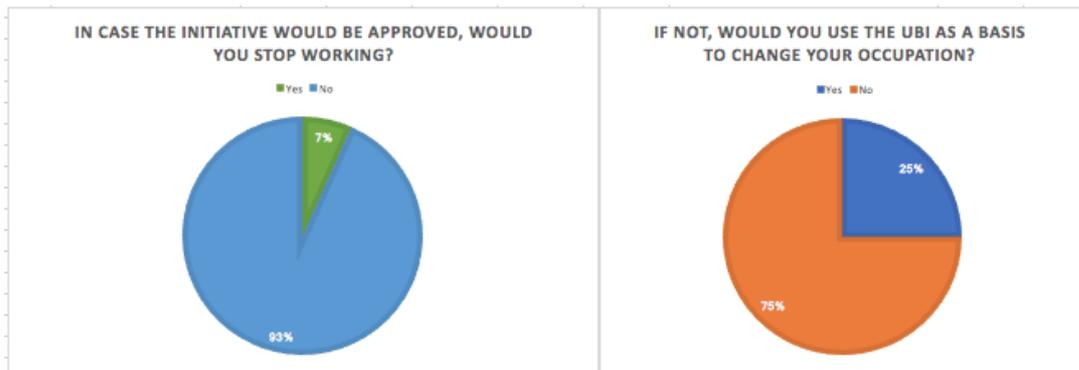
Opponents of the initiative argue that a UBI would remove the incentives to work. Once one has their basic needs provided by the government, he/she would have incentives to stop working, leading – at a further stage – to an idle society.

The sample of voters was confronted with three fundamental questions:

Questions 1 and 2

- In case the initiative would be approved, **would you stop working?**
- If not:
 - o **Would you use the UBI as a basis to change your occupation?**

Figure 12 - Would you stop working? If not, would you change your job?

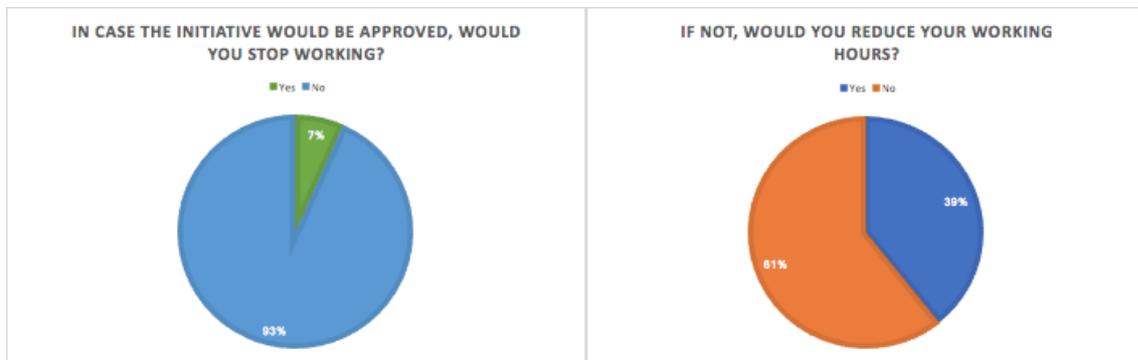


- Source: Appendix 4

Questions 1 and 3

- In case the initiative would be approved, **would you stop working?**
- If not:
 - o **Would you reduce your working hours?**

Figure 13 - Would you stop working? If not, would you reduce your working hours?



- Source: Appendix 4

What can be seen here is that in the survey realised on March 26, 2017, almost 7% of the sample population would stop working, which is not to be neglected considering the unemployment rate in Geneva was around 5.5% in 2016⁴⁸. The supporters of the initiative argue that this factor would probably be balanced by the portion of workers that

⁴⁸ Statistiques cantonales : République et canton de Genève
https://www.ge.ch/statistique/graphiques/affichage.asp?filtreGraph=03_03&dom=1

would reduce their working hours, opening this time to unemployed people and helping the immersion of those in the active labour force.

Other striking facts are:

- The portion of sample voters (25%), who would use the UBI as a basis to change their job: Since providing one's basic needs would no longer be an issue, the interviewees said that they would start professional training to be able to increase their satisfaction working in other sectors.
- The portion of sample voters (39%), who would reduce their working hours.

From these two facts, it could be concluded that an important share of the active population is either not entirely happy with the work they do or spend more time than they would like in the occupation they have.

The questions from the first part of the survey are very simplistic, and what people shared from these questions is that most would not change the time allowed to work or their occupation. Those who would change would still work, but in tasks that may not imply financial compensation.

3.2 Voters profile

The second part of the survey dealt with the reasons that lead the Swiss electorate to refuse the initiative on Unconditional Basic Income. The surveyed voters were invited to answer if they feel concerned about the changes in the work environment (unemployment and precariat), and the economic threats a UBI would suppose for the Swiss economy.

Based on their answers, the interviewees were split into several categories.

3.2.1 Level 1

Assumptions were made, to divide voters into profiling levels.

1st assumption: before voting, each voter had answered the question: Are the evolution of the work environment and automation threatening full employment? Is it something to be worried about?

Based on the 1st assumption, voters were split into 3 basic categories.

- **Y:** voters who were concerned about unemployment and the changes in the work environment.

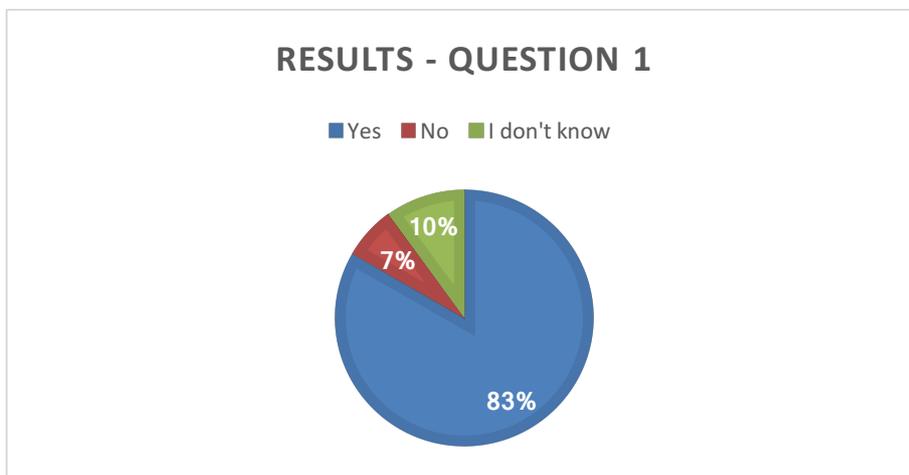
- **N**: voters who were not concerned about unemployment and the shifts in the work environment.
- **O**: voters who did not have an opinion regarding the evolution of work environment.

3.2.1.1 Questions and results – level 1

The answers to question 1 were used to consider each of the categories described above.

Question 1: **Do you think that the changes in work environment and automation suppose a threat for employment?**

Figure 14 – Answers to question 1



- Source: Appendix 4

As presented above, the majority of surveyed voters (83%) believe that the changes in work environment and automation deem a threat to full employment. However, as per the result of the voting on June 5, 2016, the Swiss voters believe that this change in the Constitution would not be the best solution to fight unemployment, economic crisis and unfair distribution of wealth. Based on this, more questions were asked to investigate the reasons for the refusal of the initiative.

3.2.2 Level 2

2nd assumption: considering assumption 1, and disregarding other reasons having a potential influence on the decision-making process, voters either voted in favour or against the initiative.

Based on the 1st and the 2nd assumptions, voters were split into six subcategories:

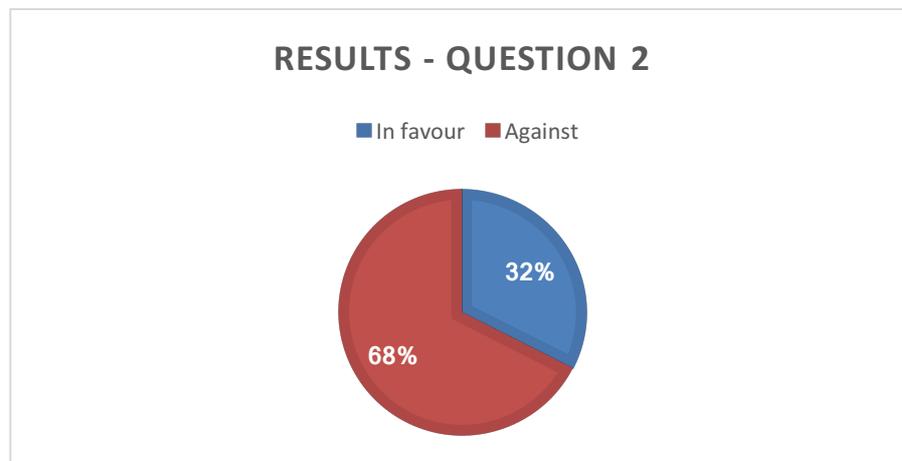
- **YF**: voters who were concerned about unemployment and the changes in the work environment (automation) and confirmed their concerns by voting in favour of the initiative.
- **YA**: voters who were concerned about unemployment and the changes in the work environment (automation) but voted against the initiative.
- **NF**: voters who were not concerned about unemployment and the changes in the work environment (automation) but voted in favour of the initiative.
- **NA**: voters who were not concerned about unemployment and the changes in the work environment (automation) and confirmed their opinion by voting against the initiative.
- **OF**: voters who did not have an opinion about unemployment and the changes in the work environment (automation) and voted in favour of the initiative.
- **OA**: voters who did not have an opinion about unemployment and the changes in the work environment (automation) and voted against the initiative.

3.2.2.1 Questions and results level 2

The answers to questions 1 and 2 were used to consider each of the subcategories described above.

Question 2: **Did you vote in favour of the initiative on Unconditional Basic Income?**

Figure 15 - Type of voters



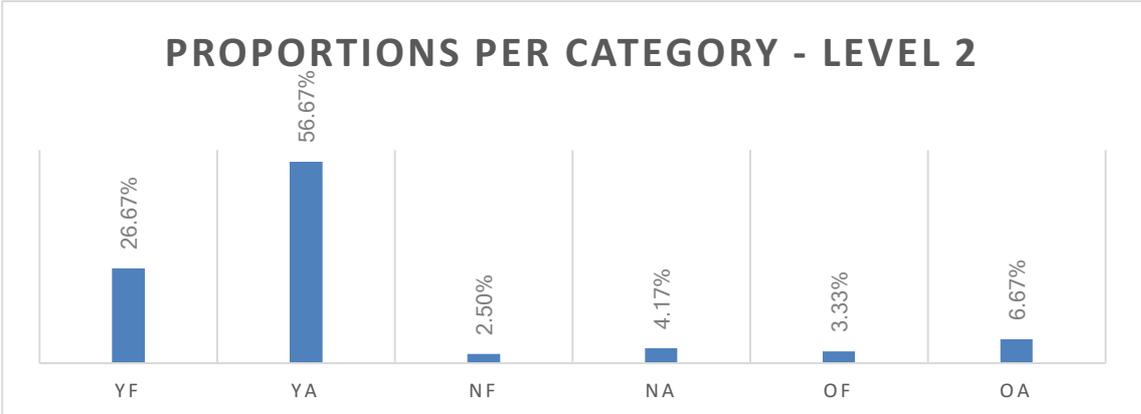
- Source: Appendix 4

68% of the sample voted against the initiative while 32% voted in favour. This result is not far from the official popular vote from June 5th, 2016 – 76.9% of the Swiss voters voted against (65.3% for the Canton of Geneva), and 23.1% of the Swiss voters voted in favour of the popular initiative (34.7% for the canton of Geneva)⁴⁹.

A statistical analysis of the above results is presented in Appendix 6.

By adding one level of granularity to the previous results, the following proportions were found.

Figure 16 - Proportions per category - level 2



- Source: Appendix 4

- 26.67% of the surveyed voters who were worried about unemployment and automation, confirmed their concerns by voting in favour of the initiative.
- 56.67% of the surveyed voters who were concerned about unemployment and the changes in the work environment, voted against the initiative.
- Only 2.5% of the surveyed voters who were not concerned about unemployment and the shifts in the work environment, voted in favour of the initiative.
- 4.17% of the surveyed voters who were not concerned about unemployment and the changes in the work environment, voted against the initiative.
- 3.33% of the surveyed voters who did not have an opinion about unemployment and the shifts in the work environment, voted in favour of the initiative.

⁴⁹ Official result obtained from the Swiss Administration <https://www.admin.ch/ch/f/pore/va/20160605/can601.html>.

- 6.67% of the sample voters who did not have an opinion about unemployment and the changes in the work environment, voted against the initiative.

3.2.2.2 Interpretations

As shown by the survey results, 83% of the sample population is concerned about the threats that automation and the changes in the work environment represent to full employment. However, only 32% of them confirmed their conviction by validating the initiative. On this basis, it can be assumed that being concerned about unemployment was not a sufficient reason to vote in favour of the UBI.

The category **YA** appears to be one of the reasons why notwithstanding having a large majority of surveyed voters concerned about the threats of automation and unemployment, only 33% voted in favour of the initiative. Considering the previous assumptions, **YA** (56.67%) represents the surveyed voters who think being concerned about unemployment issues was not enough to support the initiative.

Based on this result and considering the assumptions above, it can be concluded that a significant share of Swiss voters did not consider their concerns about unemployment as a sufficient reason to validate the initiative. Therefore the 3rd level of granularity was added by proposing a 3rd assumption.

3.2.3 Level 3

3rd assumption: after deciding on the threat of unemployment, voters had to decide if a lump sum payment would suppose a threat to the Swiss economy in case the initiative were to be approved.

Considering assumptions 1, 2 and 3, and disregarding other reasons having a potential influence on the decision-making process, voters were split into 12 subcategories:

- **YYF:** voters who were concerned about unemployment and voted in favour of the initiative, despite the fact they were also worried about the Swiss economy.
- **YYA:** voters who were concerned about unemployment but voted against the initiative because of the economic threat it would suppose.
- **YNF:** voters who were concerned about unemployment and voted in favour of the initiative because they think it would not assume a threat to the Swiss economy.
- **YNA:** voters who were concerned about unemployment but voted against the initiative despite the fact they were not worried about the Swiss economy.

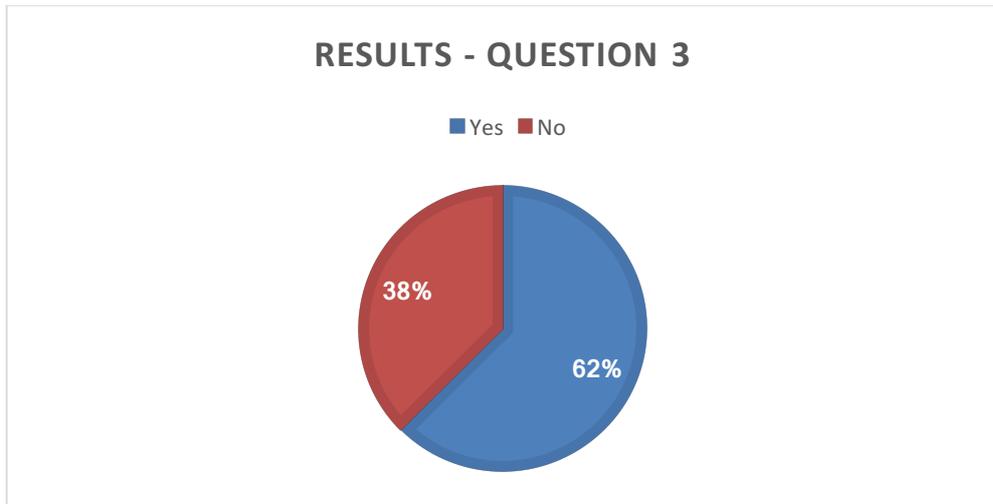
- **NYF**: voters who were not concerned about unemployment but voted in favour of the initiative despite the fact they were concerned about the Swiss economy.
- **NYA**: voters who were not concerned about unemployment and voted against the initiative because they were worried about the economy.
- **NNF**: voters who were not concerned about unemployment but voted in favour of the initiative because they think it would not suppose a threat to the economy.
- **NNA**: voters who were not concerned about unemployment and voted against the initiative despite the fact they were also not worried about the Swiss economy.
- **OYF**: voters who did not have an opinion regarding unemployment and voted in favour of the initiative despite the fact they were worried about the economy.
- **OYA**: voters who did not have an opinion regarding unemployment and voted against the initiative because they considered it a threat to the economy.
- **ONF**: voters who did not have a view regarding unemployment and voted in favour of the initiative because they think it would not suppose a threat to the Swiss economy.
- **ONA**: voters who did not have an opinion regarding unemployment and voted against the initiative even though they were not worried about the Swiss economy.

3.2.3.1 Questions and results level 3

The answers to questions 1, 2 and 3 were used to consider each of the subcategories described above.

Question 3: **Do you consider that a monthly payment of CHF 2,500.00 to every citizen in Switzerland would suppose a threat to the Swiss economy?**

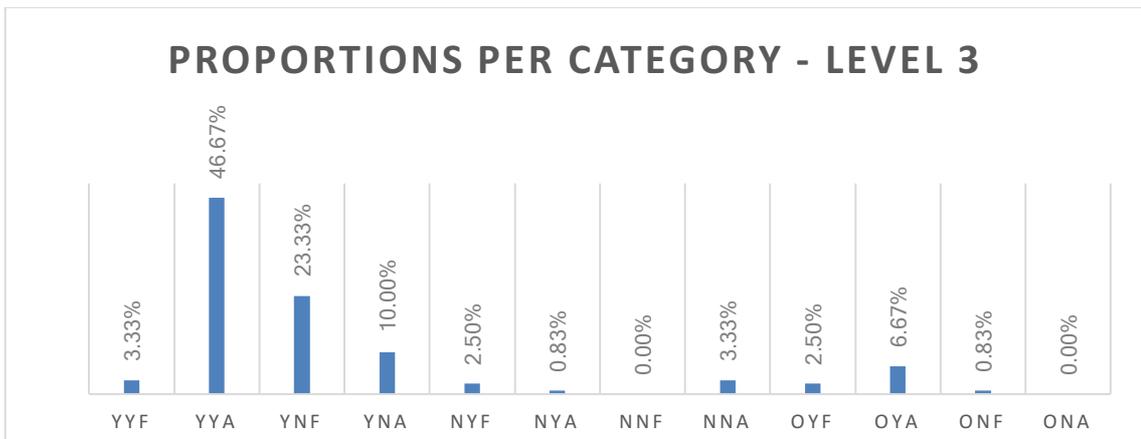
Figure 17 - Question 3



- Source: Appendix 4

By adding another level of granularity to the previous results, the following proportions were found.

Figure 18 - Proportion per category - level 3



- Source: Appendix 4

- 3.33 % of surveyed voters gave priority to their worries about unemployment despite the fact they were also worried about the Swiss economy, voting in favour of the initiative.
- 46.67% of surveyed voters decided that their concerns about the Swiss economy were stronger than the solution to unemployment given by the initiative and voted against it.

- 23.33% of surveyed voters who were concerned about unemployment and did not believe a UBI would pose a threat to the Swiss economy, confirmed their opinion by voting in favour of the initiative.
- 10% of surveyed voters who were concerned about unemployment and did not believe a UBI would pose a threat to the Swiss economy still voted against the initiative, thinking that a UBI is not the best solution to tackle the issues dealt with in this thesis.
- Surprisingly, 2.5% of surveyed voters who were not concerned about unemployment but were worried about the Swiss economy if the UBI would be accepted, voted in favour of the initiative.
- 0.83% of surveyed voters who were not concerned about unemployment but were worried about the Swiss economy if the UBI would be accepted, confirmed their opinion by voting against the initiative.
- None of surveyed voters who were not concerned about unemployment and were not worried about the Swiss economy voted in favour of the initiative.
- 3% of surveyed voters who were not concerned about unemployment and were not concerned about the Swiss economy still voted against the initiative.
- 2.5% of surveyed voters who did not have an opinion regarding unemployment and were worried about the Swiss economy voted in favour of the initiative.
- 6.67% of surveyed voters who did not have an opinion regarding unemployment but were worried about the Swiss economy confirmed their worries by voting against the initiative.
- 0.83% of surveyed voters who did not have an opinion regarding unemployment and were not worried about the Swiss economy voted in favour of the initiative.
- None of surveyed voters who did not have a view regarding unemployment and were not worried about the Swiss economy voted against the initiative.

3.2.3.2 Interpretations

As shown by the survey results, 62% of the sample population is concerned about the Swiss economy if the popular initiative were to be approved. The category YYA had the large majority of opinions as expected. Therefore, it can be assumed that being concerned about the Swiss economy was a stronger argument than the threat of

unemployment. This could be explained on the one hand by the fear left by the financial crisis and on the other hand by the stable scenario of employment in Switzerland.

3.3 Final considerations

The survey demonstrates that one of the most important factors in the decision-making process was the adverse effects that the initiative could have on the Swiss economy.

Although 83% of the surveyed voters are concerned about the threats that automation supposes for full employment, Switzerland has stable employment rates.

Therefore, regarding the assumptions and questions made during the survey, the main arguments against the popular initiative on Unconditional Basic Income were:

- Lack of evidence that a UBI is a good solution for the issues related to unemployment;
- Simplistic view of the effects of a UBI on the Swiss economy, as detailed information on the ways the initiative would be financed was missing;
- Simplistic view on to whom it should be given. The unconditional feature of the UBI scheme is probably the most difficult characteristic to be understood and accepted;
- Traditional mind-set related to the concept of “free money” and the effects on the willingness to work.

4. Conclusion

It seems to some people, that 250 years after Rousseau's Social Contract, 800 years on from the Magna Carta and 2400 years on from the birth of Aristotle, it is time to negotiate a new social contract. And it is likely that the basic income will be part of that debate. In the past 25 years, more jobs have been created than have been lost. It may be reasonable to expect that automation will continue to offer opportunities in the future. However, technological unemployment will probably accelerate in the short-run and underemployment is already a social reality. Critical subjects, among which questions about universality of revenue with a further disconnection between work and compensation, will have to be faced.

The impact of automation on employment can be divided into two main types: substitution effects and complementary effects. Substitution – as already discussed – occurs where a machine replaces human labour. But in fact, automation may also create jobs through complementary effects. Any assessment of the impact that automation has on total employment must include these complementary effects. Humankind and machine should be deployed in a complementary way in the production process to increase productivity and value creation. Automation can also bring down the cost of the goods produced. "Higher pay and lower prices boost workers' purchasing power, fuelling demand for goods and services and, ultimately, creating new jobs. Moreover, employees are also needed to produce the machinery and new technology required to automate the economy"⁵⁰.

Basic income could contribute to build a system that is more human, that recognises individuals as social beings and not only market participants. The debate must project societal models to the next 20 years – or even less – and determine whether a new economic model is necessary and to what extent it will require adaptation. Other alternatives to usual models and schemes must be explored, together with the conditions for progress. But before all, individuals must be fairly and transparently informed and educated about those questions, for them to be able to apply healthy scepticism when they have to decide about certain political decisions or societal initiatives about the future of the most emancipating human activity, which is work. One example can be found in

⁵⁰ Partially extracted from: Deloitte (2016): Transforming the Swiss Economy: The impact of automation on employment and industries <https://www2.deloitte.com/content/dam/Deloitte/ch/Documents/innovation/ch-en-cons-innovation-transforming-swiss-economy.pdf>

the proposal of the new President of France, Emmanuel Macron, giving the right to maternity leave and unemployment and illness compensation to all citizens, disregarding whether they are employed or not⁵¹⁵². Is this proposal going in the right direction or is it a way to acknowledge that full employment is to be abandoned?

The UBI is an old idea, but why are people talking more and more about it? Why is it becoming more popular than it has ever been? Probably because the issues discussed in chapter one, are being perceived more widely than ever before. Think about unemployment, and the forecast about automation. What is new now is that the idea of unlimited growth has been left behind. Thirty years ago, nobody talked about climate change, or about earth's limited resources.

More than ever, a redistribution system that is socially fair and economically rational must be designed. The UBI is potentially not the silver bullet that will solve all our problems. It may solve things at some cost. It is probably not the best solution. But as a solution it begs the question of a second-best solution, that even if not perfect, may be worth trying.

51 Une assurance-chômage pour tous:
http://www.francetvinfo.fr/economie/emploi/chomage/controle-des-chomeurs/une-assurance-chomage-pour-tous-cinq-questions-sur-la-promesse-demmanuel-macron_2132925.html

52 Assurance chômage : ce qui va changer à partir de 2018:
<http://www.lefigaro.fr/conjoncture/2017/06/06/20002-20170606ARTFIG00317-assurance-chomage-ce-qui-va-changer-a-partir-de-2018.php>

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Appendix 1: Methodology and Survey Interpretation

The survey had 120 randomly chosen people from Geneva.

Sampling

To sample the survey participants the below criteria were used:

- The survey participant must be Swiss and eligible to vote in Switzerland
- The survey participant must have voted on June 5th, 2016
- The survey participant is not a member of any political party

Sampling Distribution of Population Proportions⁵³

- 5.313.442 (46.95%) voters officially voted on June 05th, 2016 in Switzerland (130.673 (51.59%) voters in the Canton of Geneva)⁵⁴
- The initiative was refused by 76.9% of the electorate (65.3% of electors in Geneva). This proportion will be considered as the population proportion
- 120 voters were randomly sampled in the Canton of Geneva

Considering population proportion as:

$$\pi = \frac{X}{N}$$

Where:

π = Population proportion

X = Number of items in the population having the attribute of interest

N = Population size

And considering a sample proportion as:

$$p = \frac{x}{n}$$

⁵³ Business Statistics, David F Groebner and al (A decision making approach, eighth edition)

⁵⁴ Official result obtained from the Swiss Administration
<https://www.admin.ch/ch/f/pore/va/20160605/can601.html>.

Where:

p = Sample proportion

x = Number of items in the sample with the attribute of interest

n = Sample size

Based on the Theorem 5 of Applied Statistics course (academic year 2015/2016) (Groebner, 2008:291), if the sample size is sufficiently large, a discrete binomial distribution can be reasonably approximated by the normal distribution. A sample size is sufficiently large and representative of the population if⁵⁵:

$$n \pi \geq 5 \quad \text{and} \quad n(1 - \pi) \geq 5$$

Figure 19 - Theorem 5

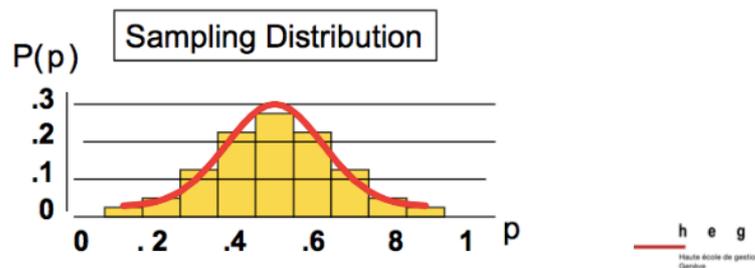
Sampling Distribution of p

Theorem 5

The sampling distribution of p is approximated by a normal distribution if:

$$n \cdot \pi \geq 5, \quad n \cdot (1 - \pi) \geq 5.$$

with mean $\mu_p = \pi$ and standard deviation $\sigma_p = \sqrt{\frac{\pi \cdot (1 - \pi)}{n}}$ (where π is the population proportion)



- Source: Applied Statistics course (academic year 2015/2016)

⁵⁵ Unfortunately, the level of mathematics in the Bachelor level is not sufficient to demonstrate this statement. An application of the Central Limit Theorem provides the rationale for this. Recalling that $p = x/n$, where x is the sum of random variables (x_i) whose values are 0 and 1. Therefore, p is in reality just a sample mean. Each of these x_i can be thought of as binomial random variables from a sample of size $n = 1$. Thus, they each have a mean of $\mu = n \pi = \pi$ and a variance of $\sigma^2 = n \pi(1 - \pi) = \pi(1 - \pi)$. From the Central Limit Theorem, the sample mean has an expected value of μ and a variance of σ^2/n . Thus, the sample proportion has an expected value of $\mu = \pi$ and a variance of $\sigma^2 = [\pi(1 - \pi)]/n$ (Groebner, 2008 : 292).

Since:

$$120(0.769) \geq 5 \text{ is true}$$

and

$$120(1 - 0.769) \geq 5 \text{ is true}$$

The sample size can be considered to be large enough and representative of the Swiss population.

Assuming then, the sample "p" to be approximately normally distributed with:

$$\mu_p = \pi$$

$$\text{Standard error} = \sigma_p = \frac{\sqrt{\pi(1-\pi)}}{\sqrt{n}}$$

$$\text{Sampling error} = p - \pi$$

The sampling error calculated on the number of surveyed voters who refused the initiative was "**sampling error**" = $0.675 - 0.769 = -0.094$ ⁵⁶.

For the sake of the discussion, if only the voters of the Canton of Geneva would be taken into consideration, the sampling error calculated on the number of surveyed voter who refused the initiative would be "**sampling error**" = $0.675 - 0.653 = 0.022$.

z-Value for Sampling Distribution of p

$$z = \frac{p - \pi}{\sigma_p}$$

Where:

z = Number of standard errors p is from π

p = Sample proportion

⁵⁶ The value 0.675 corresponds to the proportion of sampled voters who refused the initiative. The value 0.769 corresponds to the population proportion of voters who refused the initiative.

$\sigma_p = \frac{\sqrt{\pi(1-\pi)}}{\sqrt{n}}$ = Standard error of the sampling distribution

π = Population proportion

Appendix 2: The Swiss Political System⁵⁷

The Swiss direct democracy and popular initiatives form a unique democratic system where the electorate has the power to amend the Federal Constitution (if and when in the time frame of 18 months, a minimum of 100'000 valid signatures is collected among the population⁵⁸).

These popular initiatives are defined in the official Confederation's website as follows⁵⁹:
"Any member of the Swiss electorate can launch a popular initiative to demand an amendment to the Federal Constitution (of one or more articles or paragraphs). If the initiative is successful and is not subsequently retracted, the amendment to the Constitution will be put to the popular vote and needs to be approved by a majority of the electorate and the cantons (a 'double majority') to be made."

To launch a popular initiative in Switzerland⁶⁰, you first need to form an initiative committee, composed of between seven and twenty-seven persons who are entitled to vote at the federal level.

The committee draws up the text of the initiative (which can be a proposal formulated in general terms or the final draft of a specific project) in German, French and Italian, along with a title. On request, the Federal Chancellery will provide the committee with sample signature lists.

The text is submitted to the Federal Chancellery, where it is translated into the other official languages. The committee then provides the Federal Chancellery with a model signature list and with a written declaration in which the members attest to be on the initiative committee.

The Federal Chancellery checks that the text and title of the initiative conform with legal requirements and decides on the basis of this preliminary consideration. The decision is published in the Federal Gazette, from which date the committee has 18 months to collect at least 100,000 signatures, have them validated by the communes (see below)

⁵⁷ How to launch a federal popular initiative: <https://www.ch.ch/en/demokratie/political-rights/popular-initiative/how-to-launch-a-federal-popular-initiative/>

⁵⁸ Switzerland's political system: <https://www.admin.ch/gov/en/start/federal-council/political-system-of-switzerland.html>

⁵⁹ Popular initiatives: <https://www.ch.ch/fr/initiatives-populaires/>

⁶⁰ Text entirely extracted from: <https://www.ch.ch/en/popular-initiatives/>

and submit them to the Federal Chancellery. As some of the signatures are usually invalid, it is advisable to collect more than 100'000. It may take some time for local authorities to check signatures, so you should make sure you submit the signature lists on a continuous basis and in plenty of time so that the 18-month deadline can be respected.

A popular initiative can be put to the vote if at least 100'000 signatures are validated by the Federal Chancellery. The popular initiative is not voted on immediately: up to several years may pass between the initiative being submitted and the popular vote taking place.

Appendix 3: Original texts of the initiative⁶¹

Original version in FR

La Constitution est modifiée comme suit:

Art. 110a Revenu de base inconditionnel

- 1 La Confédération veille à l'instauration d'un revenu de base inconditionnel.
- 2 Le revenu de base doit permettre à l'ensemble de la population de mener une existence digne et de participer à la vie publique.
- 3 La loi règle notamment le financement et le montant du revenu de base.

Original version in DE

Die Bundesverfassung wird wie folgt geändert:

Art. 110a Bedingungsloses Grundeinkommen

- 1 Der Bund sorgt für die Einführung eines bedingungslosen Grundeinkommens.
- 2 Das Grundeinkommen soll der ganzen Bevölkerung ein menschenwürdiges Dasein und die Teilnahme am öffentlichen Leben ermöglichen.
- 3 Das Gesetz regelt insbesondere die Finanzierung und die Höhe des Grundeinkommens.

Original version in IT

La Costituzione federale è modificata come segue:

Art. 110a Reddito di base incondizionato

- 1 La Confederazione provvede all'istituzione di un reddito di base incondizionato.
- 2 Il reddito di base deve consentire a tutta la popolazione di condurre un'esistenza dignitosa e di partecipare alla vita pubblica.
- 3 La legge disciplina in particolare il finanziamento e l'importo del reddito di base.

⁶¹ Texts extracted from: <https://www.admin.ch/opc/it/federal-gazette/2015/7899.pdf>

Appendix 4: Survey Results⁶²

Results from the survey performed on March 26, 2017:

The first part of the survey, The Changes in Labour Supply.

- Question 1 – **In case the initiative on Unconditional Basic Income would be approved, would you stop working?**
 - Yes: 8 out of 120
 - No: 112 out of 120
- Question 2 – **In case you would not stop working, would you change your occupation?**
 - Yes: 28 out of 112
 - No: 84 out of 112
- Question 3 – **In case you would not stop working, would you reduce your working hours?**
 - Yes: 44 out of 112
 - No: 68 out of 112

The second part of the survey, the reasons that lead the Swiss electorate to refuse the initiative on Unconditional Basic Income.

- Question 1 – **Do you think that the changes in work environment and automation supposes a threat for employment?**
 - Yes: 100 out of 120
 - No: 8 out of 120
 - Do not know: 12 out of 120
- Question 2 – **Did you vote in favour of the initiative on Unconditional Basic Income?**
 - Yes: 39 out of 120

⁶² For detailed analysis of the survey, please refer to Chapter 3

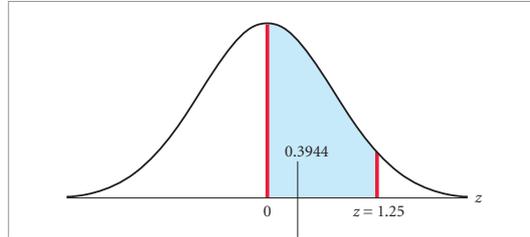
- No: 81 out of 120
- Combined results from questions 1 and 2
 - YF: 32 out of 120
 - YA: 68 out of 120
 - NF: 3 out of 120
 - NA: 5 out of 120
 - OF: 4 out of 120
 - OA: 8 out of 120
- Question 3 – **Do you consider that a monthly payment of CHF 2500.00 to every citizen in Switzerland would suppose a threat to the Swiss economy?**
 - Yes: 75
 - No: 45
- Combined results from questions 1, 2 and 3
 - YYF: 4
 - YYA: 56
 - YNF: 28
 - YNA: 12
 - NYF: 3
 - NYA: 1
 - NNF: 0
 - NNA: 4
 - OYF: 3
 - OYA: 8
 - ONF: 1
 - ONA: 0

Appendix 5: Standard Normal Distribution Table⁶³

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APPENDIX D

Standard Normal Distribution Table



z	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0199	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2967	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3531	0.3554	0.3577	0.3599	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990

⁶³ From Appendix D - GROEBNER, David F., SHANNON, Patrick W., FRY, Phillip C. and SMITH, Kent D., 2008. Business Statistics - A decision-making approach. 8th Edition. Pearson. ISBN 978-0-13-612101-5.

Appendix 6: Sample analysis

To estimate the accuracy of the sample, this work will present how likely it is that a sample of

$$n = 120$$

voters will have more than 32% of votes in favour of the initiative. To answer this question, we first check to determine if the sample size is sufficiently large. As per Appendix 1, we can safely conclude that the sampling distribution of the sample proportions will be approximately normal.

As the population proportion is

$$\pi = 23.1\%$$

And using the equations from Appendix 1, we can compute the mean and standard error for the sampling distribution as follows:

$$\mu_p = 0.231$$

$$\sigma_p = \frac{\sqrt{(0,231)(0,769)}}{\sqrt{120}} = 0.038475$$

From the Appendix 1, we convert the sample proportion to a standardized z-Value.

$$z = \frac{p - \pi}{\sigma_p} = (0.32 - 0.231) / (0.038475) = 2.3132$$

Therefore, having more than 32% voters in favour of the initiative is very unlikely to happen. From appendix 5:

$$P(p > 0.32) = 0.5 - 0.4896 = 0.0104$$

Which is in pace with the national results for the popular initiative.

For the sake of the discussion if we took only the result for the canton of Geneva:

$$\pi = 34.7\%$$

$$\mu_p = 0.347$$

$$\sigma_p = 0.43454$$

$$z = 0.062135$$

$$P(p > 0,32) = 0.4761$$

It would also make sense since for the canton of Geneva the proportion of voters in favour of the initiative was higher than 32%.

Appendix 7: Current Basic Income Experiments⁶⁴

Current Basic Income Experiments (and those so called): An Overview

[Kate McFarland](#) • May 23, 2017



The (Second) Year of the Pilot

Status of Basic Income (and Related) Experiments in Early 2017

Last Updated: May 15, 2017

BIEN cofounder Guy Standing, a basic income pilot veteran and now frequent consultant, dubbed 2016 "[the year of the pilot](#)" in response to the burgeoning interest in experimentation with basic income in various countries throughout the world. In 2017, some of these pilot studies were launched, some have been delayed, and other plans have remained dormant. Some have turned out to resemble a full-fledged basic income to a lesser degree than first anticipated.

This page summarizes the current state of this year's existing, planned, and previously announced basic income pilot experiments.

It will be updated on an ongoing basis.

⁶⁴ Entirely extracted from Basic Income Earth Network:
<http://basicincome.org/news/2017/05/basic-income-experiments-and-those-so-called-early-2017-updates/>

A. UPDATES ON SEVEN STUDIES

Following are summaries of the present status (as of mid-May 2017) of seven pilot studies of basic income—or, better put, seven *alleged or reported* pilot studies of basic income—that have received international publicity within the past year, including projects in , , , , , , , and the .

First, though, an important caveat: although each project listed below has been described as a “basic income pilot” or “basic income experiment” in media reports, few manifest *every* characteristic of a basic income, [defined by BIEN](#) as “a periodic cash payment unconditionally delivered to all on an individual basis, without means-test or work requirement.”

Granted, *any* social policy experiment is by its nature limited in certain ways, making it something of a vacuous criticism to say that a basic income experiment fails to test a “genuine” basic income. While a basic income is lifelong, experiments are necessarily bounded in duration. While a basic income is universal, experiments typically require that a portion of the population *not* receive the benefit in order to provide a control or reference group. (Even saturation studies, in which every member of a community is eligible for the program, remain limited in that the basic income does not extend to other communities in the same general geopolitical region.)

That said, some of the most highly-publicized experiments and pilot programs diverge from a basic income in ways that are significant even after accounting for inherent constraints due to the nature of experimentation. For example, the target population might not be universal. (As described below, this is the case in the experiment currently running in Finland, as well as those planned in Ontario and several Dutch municipalities and, likely, the experiment under development by Y Combinator.) Additionally, the benefits disbursed to the treatment groups in some of the experiments—such as, most notably, those planned in Ontario and the Netherlands—diverge from some of the key attributes of a basic income, such as by being household-based or reduced with earned

income. (As mentioned below, the treatment conditions in the Dutch experiments will even retain a degree of job-conditionality.)

I touch upon additional caveats at the end of this article.

1. Finland's "Perustulokeilu" (Basic Income Experiment)

Status: Launched on January 1, 2017.



"Rainbow over the Baltic" CC BY-NC 2.0 [Mariano Mantel](#)

The national government of Finland has [enacted](#) a two-year experiment to investigate the effects of a basic income on labor market participation, designed and directed by Kela (Finland's Social Insurance Institution). The experimental group consists of 2,000 persons, who were randomly selected from a pool of individuals between the ages of 25 and 58 who were receiving unemployment benefits from Kela in November 2016 (about 175,000 individuals nationwide). Participation in the basic income program was mandatory for those selected.

The 2,000 participants are receiving unconditional payments of €560 (about 590 USD) per month. Unlike Finland's current programs of unemployment assistance, the pilot program imposes no requirement that recipients demonstrate that they are seeking employment or accept jobs offered to them, and those who do obtain work will continue to receive the full €560. (Thus, while the sample is clearly not representative of all Finns, the individual cash transfers do match the definition of basic income, although not a fully livable one.)

The experiment was officially launched on January 1, 2017—with the [first payouts](#) distributed on January 9—and will continue through December 31, 2018.

The research group at Kela will compare outcomes in the experimental group to a control group, consisting of all persons in the original target population who were not selected to participate. As mentioned above, the analysis will focus on labor market participation, including differences in employment rates between the treatment and control groups. Research director Olli Kangas has stated in recent lectures that Kela will also monitor expenditure on medication, health care usage, and income variation.

To avoid observer effects, Kela is conducting no interviews or questionnaires during the course of the experiment, and will publish no results prior to its conclusion at the end of 2018 ([despite recent rumors](#) driven by exaggerated claims stemming from a single anecdote voluntarily produced by one experimental participant).

Kangas has [recommended expansion](#) of the experiment in future years (e.g. to test different models and broaden the target population); at the time of this writing, however, the government has not acted upon this recommendation.

Official website: <http://www.kela.fi/web/en/basic-income-experiment-2017-2018>.

2. GiveDirectly's Kenyan Basic Income Experiment

Status: Pilot launched in one village in October 2016; full experiment (200 villages) intended to launch in fall 2017.

GiveDirectly, a US-based charitable organization, has initiated a project in which it will eventually provide unconditional cash transfers to the residents of 200 villages in rural Kenya (about 26,000 people in total).

An initial pilot study commenced in one village in October 2016, in which

all 95 residents now receive monthly unconditional cash payments of about 23 USD (€21) per month, amounting to roughly half of the average income in rural Kenya. Payments will continue in this village for 12 years. At the time of this writing, only this initial “test village” is receiving a basic income. GiveDirectly’s current objective is to launch its full experiment in September 2017.



Rural Kenya, CC BY-NC 2.0 [ViktorDobai](#)

In the full study, 300 villages will be randomly assigned to one of four groups: three treatment groups, in which all residents receive some form of unconditional cash transfer, and a control group of villages in which no cash transfers are given to any residents.

In the first treatment group, which will include 40 villages, residents will receive cash payments of about 23 USD every month for 12 years (as in the initial test village). In the second, containing 80 villages, residents will receive monthly cash payments of the same amount, but only for two years. In the third, also containing 80 villages, residents will receive a *lump-sum payment* equal in amount to the two-year basic income. (Note that, ignoring their time-boundedness, the schemes implemented in the first two treatment groups do meet BIEN’s definition of ‘basic income’.)

As GiveDirectly explains on its website, “Comparing the first and second groups of villages will shed light on how important the guarantee of future transfers is for outcomes today (e.g. taking a risk like starting a business). The comparison between the second and third groups will let us

understand how breaking up a given amount of money affects its impact.”

The organization also indicates that it will investigate outcomes including “economic status (income, assets, standard of living), time use (work, education, leisure, community involvement), risk-taking (migrating, starting businesses), gender relations (especially female empowerment), [and] aspirations and outlook on life.”

GiveDirectly is making much of its data public as it collects it (e.g. [responses](#) to the first survey of participants in its initial pilot); this practice, however, pertains only to the pilot village, which is not itself to be included in the full experiment. The organization expects to publish its first experimental results after one or two years.

Official website: www.givedirectly.org/basic-income.

3. Ontario’s Guaranteed Minimum Income (“Basic Income”) Pilot

Status: Pilot studies scheduled to commence in two regions in spring 2017, and in a third region in autumn 2017.



Lindsay, Ontario, CC BY 2.0 [RichardBH](#)

The government of the Canadian province of Ontario is preparing a three-year pilot study of a guaranteed minimum income (commonly called in a ‘basic income’ in Canada), which will take place in three locations: the Hamilton, Brantford, and Brant County region (launching in late spring 2017); Thunder Bay and surrounding area (launching in late spring 2017);

and the city of Lindsay (launching in autumn 2017).

A total of 4,000 potential participants will be randomly selected from a pool of low-income adults between the ages of 18 and 64 years who have lived in one of the three test locations for at least one year. Participation is voluntary, and those who do agree to participate in the experiment may exit at any time during the study.

Study participants will receive a minimum annual income of 16,989 CAD (€11,340) for single individuals and 24,027 CAD (€16,038) per year for couples. That is, individuals and couples with *no* external income would receive this amount of money. For participants who to earn additional income, the amount of the benefit will be reduced by the amount of 50% of earned income (entailing that, for example, single individuals will stop receiving any payment if their income rises above 48,054 CAD per year). Individuals with disabilities will receive an additional amount of up to 500 CAD (€334) per month.

The benefit is not contingent on work or looking for work. However, because the amount of the benefit depends on income and household composition, and because eligibility for the study is limited to low-income individuals, the program to be tested in Ontario is not a basic income *in BIEN's sense*. (As mentioned above, the term 'basic income' is often used in Canada to refer to guaranteed minimum income programs, in contrast to the definition adopted by BIEN and common in Europe. The Ontario government is not being sloppy or dishonest in titling the program 'Basic Income Pilot'; mere dialectical differences explain the ambiguity.)

According to the Government of Ontario website, the experiment will measure outcomes in a variety of areas, including [food security](#), stress and anxiety, mental health, health and healthcare usage, housing stability, education and training, and employment and labor market participation. A third-party research group will evaluate data collected during the pilot.

Results of the pilot will be reported to the public in 2020.

Official site for more information: www.ontario.ca/page/ontario-basic-income-pilot.

4. Municipal Social Assistance Experiments in the Netherlands

Status (July 2017): Six municipalities approved to proceed with two-year experiments, which will begin in Sep-Oct 2017; applications from Utrecht and Amsterdam currently under review.

In 2016, research teams in several municipalities in the Netherlands developed plans to experiment with unconditional cash transfers to replace the nation's workfare-oriented program of social assistance. However, their plans [encountered resistance](#) from the national government, which imposes constraints upon—and, in effect, prohibits—experimentation with unconditional benefits. (For example, the Dutch Participation Act would require that experimental participants be surveyed after six and twelve months to verify that they have made sufficient efforts to find work, and dropped from the study if they have not—effectively removing the “unconditionality” of the benefit.)

A pilot proposed in Utrecht, which had gained the lion's share of attention in the English-language news media, [has been delayed](#) after the government failed to authorize the experiment as designed by the Utrecht University research team.



Groningen, CC BY-NC-ND 2.0 [Emmanuel Fromm](#)

On July 3, 2017, the Dutch Ministry of Social Affairs authorized experiments in the first five municipalities: Groningen, Wageningen, Tilburg, Deventer, and Ten Boer ([read more](#)). Groningen and Ten Boer will be working in collaboration.

A similarly structured experiment in Nijmegen, which is to involve 400 participants, was also approved later in the month.

In contrast the previously rejected design of an experiment for in Utrecht, the designs of the latter experiments were deemed to be in compliance with the requirements of the Participant Act. For example, each includes a treatment group in which participants are subject to workforce-reintegration requirements that are *more intensive* than current welfare programs.

In each of the experiments, which will run for two years, participants will be randomly selected from a pool of current social assistance beneficiaries (with participation voluntary for those selected), and assigned either to a control group or to one of several treatment groups.

Each experiment has at least three treatment groups, testing the following types of interventions: (1) removing reintegration requirements (e.g. job applications and training programs) on welfare benefits; (2) providing a more intensive form of reintegration service; (3) permitting participants to earn additional income on top of their welfare benefits. Subjects assigned to the third treatment groups will be permitted to retain 50% of additional earned income, up to a maximum of €199 per month, for the duration of the two-year experiment. In contrast, under current policy, welfare recipients are permitted to keep only 25% of additional income, and only for up to six months.

The Groningen / Ten Boer experiment includes a fourth treatment group, in which participants are permitted to choose to join any one of the three preceding groups.

It is not fully accurate to refer to the Dutch municipal experiments as tests

of basic income. None includes an experimental condition in which the amount of the benefit is fully independent of either income or household composition (the existing benefits are household-based, which is not to be altered in any of the proposed experiments). Further, none of the proposed experiments includes a treatment that *combines* a reduction in the withdrawal rate of benefits with a removal of work-related conditions. And, as mentioned above, even those subjects who receive the “unconditional” payments will be subject to removal from the study after six or twelve months if they fail to seek work.

Researchers plan to examine outcomes such as employment (including part-time and temporary employment), education, and health and well being.

5. Eight’s Unconditional Cash Transfer Project in Uganda

Status: Launched on January 1, 2017.

In January 2017, Eight, a charitable organization based in Belgium, began disbursing unconditional cash payments in the Ugandan village of Busibi. All residents of the village, including 56 adults and 88 children, receive monthly cash payments, distributed via mobile phones. Each adult receives 18.25 USD (about €16.70) per month, approximately 30% of the average income of lower-income families in Uganda, and each child receives half of this amount, or 9.13 USD per month. The payments will continue through the end of 2018.



Used by permission of Steven Janssens

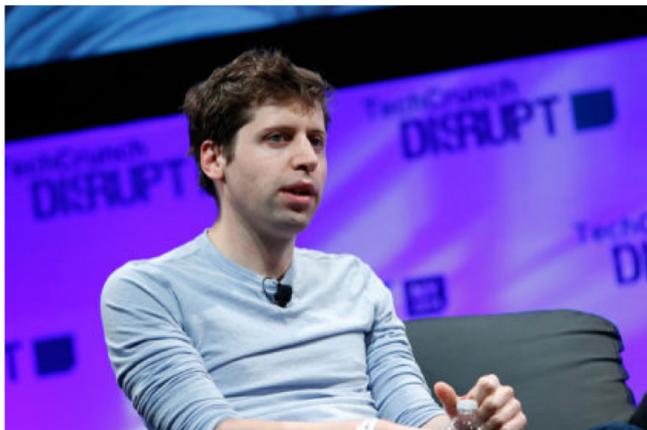
Eight is working with anthropologists at Belgium’s University of Ghent to examine outcomes along four main dimensions: girls’ educational achievement, access to health care, entrepreneurship and economic development, and participation in democratic institutions. Researchers will compare data collected during and after the pilot to data that were gathered before its launch. However, no additional village is being studied as a control, limiting the project’s usefulness as an experiment.

That said, Eight’s project has objectives beyond research. It is also the basis of a [documentary](#), the first segments of which have already been release, and cofounder Steven Janssens [has emphasized](#) its larger purpose to inform future basic income projects: “From our experiences with this pilot we will learn and adjust where necessary, because in the long term we want to scale-up to more villages as our organization grows.”

Official site for more information: eight.world.

6. Y Combinator’s US-Based Unconditional Cash Transfer Study

Status: Design phase; no known launch date.



Sam Altman, CC BY 2.0 TechCrunch

In early 2016, Silicon Valley tech entrepreneur Sam Altman decided to pursue a privately-funded basic income experiment, motivated in part by the goal of moving away from a focus on employment effects and

examining potential benefits of a basic income more holistically. To this end, he founded a research group at his company Y Combinator to design and implement the project.

In a [February 2017 talk](#) at Stanford, research director Elizabeth Rhodes explained that Y Combinator's pilot is still in the design phase. As currently planned, it will use a stratified sample of 2,000 to 3,000 individuals from two states, between the ages of 21 and 35, with household incomes below the median in their area. At least 1,000 of these study participants will be randomly assigned to the treatment group, in which they will receive 1000 USD (about €915) per month for three years (with a subset receiving the payments for an additional two years). The payments will be given unconditionally and irrespective of income. The remainder of the sample will provide a control group.

The research group is also still in the process of developing metrics to evaluate the experimental results. However, Rhodes has indicated that experimenters are interested in a holistic evaluation of individual-level outcomes such as labor market participation, training and education, time spent with children, physical and psychological health and well-being, risk-taking, financial health, and help given to friends and family. Outcomes related to the children of participants (e.g. grades and test scores) might also be examined.

Y Combinator's "pre-pilot" in Oakland, [announced](#) in May 2016 to media acclaim, is not itself an experiment; its purpose is merely to help the research team fine-tune its methods and procedures (selection of subjects, disbursement of payments, collection and recording of data, etc.).

7. Scottish Municipal Experiments

Status: Feasibility studies in progress.



Glasgow Bridge, CC BY-NC-ND 2.0 [Colin Campbell](#)

In Glasgow, Scotland, the City Council has partnered with the think tank Royal Society of Arts (RSA) to [investigate designs for a basic income pilot](#). The planning process, while moving forward, is at an early stage in development, with the Council and RSA currently working on a study of the financial, administrative, and constitutional feasibility of the pilot. Workshops on these topics will be held in June and July 2017, and a report is planned for September.

The Councils of [Fife](#) and [North Ayrshire](#) have also committed to investigate the possibility of conducting basic income experiments.

B. OMISSIONS AND FURTHER CAVEATS

Avid followers of basic income news (including *Basic Income News*) might have noticed that some previously announced pilots and experiments have been omitted from the above list.

Oversight, of course, is a possible cause: if a current or planned basic income experiment is missing from this page, please submit it to our [Submit a News Lead](#) form.

In some cases, though, apparently omissions may be intentional. Sometimes “basic income experiments” are announced in the media (1)

prematurely, (2) when the experiment is not actually testing a basic income, or (3) when the project is not an experiment:

1. Not all previously announced pilot studies have come to fruition. For example, contrary to claims promulgated in news media and social media in recent months, neither the [Office of Financial Empowerment of San Francisco, California](#) nor the [provincial government of Prince Edward Island, Canada](#) is pursuing a pilot study of basic income at this time (primarily due, in both cases, to failures in attempts to secure funding for the experiments).

India has also occasionally been cited as a location about to launch a new basic income pilot study—or even about to implement a full-blown basic income *policy* (see [the response](#) in *Basic Income News* to rumors that circulated at the start of the 2017). To be sure, the national government of India has shown considerable interest in universal basic income, devoting an entire chapter to the topic in the [2017 Economic Survey](#), an annual document prepared by the Ministry of Finance. India is also notable in the basic income community for the success of [previous basic income pilot studies](#). At the time of this writing, however, no firm plans for additional pilot studies (let alone a full-blown policy) have been announced, and any popular media reports of new pilot studies in India remain speculative and premature.

In general, one should be wary when the popular media announce the impending launch of a basic income experiment. Such announcements often frame the prospective studies as far more certain—and farther along in the planning process—than they actual are. Researchers and governmental officials might indicate interest in running an experiment prior to attempting to obtain funds or examining the legality or feasibility of the project, and sometimes such expressions of interest capture the ears of the media. Of course, such tentative interest does not entail that an experiment will *ever* actually manifest.

2. I have raised the second issue—the fact that many so-called “basic income pilots” or “basic income experiments” diverge substantially from

tests of a genuine basic income—at the start of this article, and we have already seen examples above (including the Dutch social assistance experiments and the Ontario pilot).

Due to their relative lack of attention in popular media, I have not included reference to other social assistance experiments that have, on occasion, been inaccurately called “basic income experiments” — including those in [Barcelona](#) and the Italian town of **Livorno**. About the latter, a six-month social assistance experiment, BIEN-Italia’s Sandro Gobetti has [clarified](#) in *Basic Income News*, “Among the requirements [for participation in the experiment] was residency in the municipality for at least five years, unemployment status, registration at the employment center and a family income not exceeding €6530 gross per year. In exchange for €500 monthly, the municipality invited successful applicants to perform socially useful work.”

3. Finally, note that several non-profit organizations have launched projects that involve the distribution of unconditional cash transfers to individuals, but that are *not* experiments (although, in some cases, they might still be called “pilots”).

For example, Brazil’s ReCivitas raises money to distribute unconditional cash payments of 40 Brazilian Reais (about €12 or 10 USD) per month to residents of the village of Quatinga Velho, Brazil. In January 2016, the organization announced that the monthly payments would be lifelong, and began distributing the payments to an initial group of 14 individuals. However, the ReCivitas Institute is not gathering data to study the effects of basic income. Project leaders [have stated that](#) they are already convinced that basic income is effective, and that their goal is to provide a model and inspiration to other similar initiatives. The initiative might be considered a pilot, insofar as it is intended to provide information about how NGOs have effectively implement a basic income scheme; however, it is not an experiment.

Lottery programs that award selected individuals their own “basic income” for some length of time, such as Germany’s *Mein*

Grundeinkommen, are also not experiments and should not be classified as such.

Most recently, a newly launched film project in the United States, [Bootstraps](#), has begun raising money for what it calls a “basic income pilot program”. This effort also appears not to be an experiment but, instead, a similar lottery-style program, intended to generate anecdotes, publicity, and awareness of the idea of basic income rather than robustly test its effects.

Reviewed by Tyler Prochazka. Some additional proofreading by Karl Widerquist, May 25, 2017

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About Kate McFarland

Kate McFarland has written 451 articles.

Kate has previously made a living as a professional student, but is retired for the time being. Regarding her present work in the UBI community, you may read more [here](#).

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