For roboethics issues like of robots taxation, should we apply "pro et contra" or "SWOT analysis"

Ioannis Patias[1] ,Nikoleta Leventi[2]

[1] *Faculty of Mathematics and Informatics*
University of Sofia St.Kliment Ohridski" 5 James Bourchier blvd., 1164, Sofia, Bulgaria
[2] *Faculty of Public Health Medical University – Sofia, Sofia, Bulgaria*
Corresponding Author: Ioannis Patias

ABSTRACT: *This paper presents the basic constitution of the concept of taxation, two tools for strategic decision making and based on that discusses on favor of and against the idea of robots taxation. Like any other idea's pros and cons are its advantages and disadvantages, which should be carefully consider so that a sensible decision may be reached. But, looking in pros and cons, does not take in to consideration the variable time. There is no question that robots should be considered as a good thing that can help us produce cheap goods, and provide cheap services. But nobody knows at the moment whether robots will be good also for working people (blue or white collar). Robots for sure are a complicated issue. It is necessary to evaluate the pros and cons before drawing any conclusions, but it is also very important to see the future opportunities and threats.*
Keywords: robots, taxation, roboethics.

I. INTRODUCTION

Many aspects of robots are not explored yet. Roboethics for instance is a short expression for ethics of robotics. It is often used in the sense that it is concerned with the behavior of humans, how humans design, construct, use and treat robots and other artificially intelligent beings, whereas machine ethics is concerned with the behavior of robots themselves, whether or not they are considered artificial moral agents (AMAs) [1]. While the issue is as old as the word robot, the short word roboethics was put forward in 2001/2002, and publicly discussed in 2004 during the First International Symposium on Roboethics by roboticist Gianmarco Veruggio [2].

As the applications of robots to society are expected to be wider and wider, robotics is going to trigger social and economic changes. This opens new social and ethical questions for which the designers, and the constructors must now be familiar and prepared. The relationship between theory and practice in financial and economical aspects brings up the question of profits and loses coming form this wider application of robots both in the production of goods and the delivery of services. The questions presented should be well understood by each area specialists, engineers, designers, and constructors, and by all of us, both as consumers of the goods, and as users of the services. Given the subject is important everybody has to be ready for making deeper analysis and reach proper conclusions.

After all this is not the first time we face this kind of changes in our world. The First Industrial Revolution used steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. Having this experience we should try to take advantage of the coming changes, including the case of posing or not taxes over robots.

II. TAXATION

But, let's first define the purpose of taxation. The main purpose of taxation [3] is to generate sufficient revenue to finance public sector activities in a non-inflationary way. Countries respectively may raise revenue in different ways. A country's choice on how to structure its tax system depends upon many factors, such as the

level of development, the need and desire for increased public services, and the capacity to levy taxes effectively. Tax policy choices also depend on a country's preference as to such public policy goals as attaining a desired distribution of income and wealth and increasing the rate of national (and perhaps regional) economic growth.

We may say it is obvious that no one likes taxes. On the one hand people do not like to pay them. But also on the other governments do not like to impose them. But, taxes are necessary both to finance desired public spending in a non-inflationary way and also to ensure that the burden of paying for such spending is fairly distributed. At the end, taxes while necessary, at the same time impose real costs on society, so good tax policy should focus on to minimizing those costs.

Tax policy should not be seen as just about economics. Tax policy should be considered to reflect political factors, but also include concerns about fairness. In many countries experienced the misbalance as increased economic growth derived to increase of the disparity between the rich and the poor. In this direction taxes influence the balance of before-tax distribution of income by defining and sometimes changing economic incentives. Taxes also influence the balance of after-tax distribution of income through by applying methods like the so-called progressive income taxation.

Such methods are in the direction of fairness or equity, which is considered a key issue for tax regime designing. In this direction the idea is that taxes are being applied as a tool to secure equity primarily. In the general concept of national governments not needed taxes to secure funds, having always the possibility of printing the required money for their operations. But, taxes are a mechanism to circulate money in the direction from the private sector to the government in an as much as possibly efficient and equitable way, trying to keep administrative expenses as low as possible.

Here we came in a position where we cannot define what is fair. In many situations we have two opposite sites, and respectively what one site considers fair, can differ from the conceptions of the other site. Fairness in taxation is defined in terms of horizontal and vertical equity. On the one hand horizontal equity requires those in similar circumstances to pay the same amount of taxes. On the other hand vertical equity requires appropriate differences among taxpayers in different economic circumstances. No matter the ideas seem reasonable, unfortunately, none of them has full acceptance, and there are always tax policy debates regarding which to be applied.

Finally, even if we agree on how to apply, there are also issues on how to operate with. In typical case of a company levy, it is measurable to define by the existing legislation what constitutes a company and what constitutes the added value that is generated and respectively is going to be taxed. But, in terms of lawmaking it is difficult to define and agree precisely on what a robot is. In the same direction, calculating the taxable income generated by a robot, which has replace another production process also poses problems. The European Parliament already proposed the concept of electronic person [4]. Also the European Commission [5] proposals are in the direction of requiring companies to disclose the number of robots that they use, the savings in social security contributions made through the use of robots, and an approximation of the amount of revenue that results from the use of robots. For now this information is with voluntary nature, but still poses its own problem. After all calculating social security savings and deducing revenue increases could prove incredibly difficult where there is not a direct link between a robot being used and a worker losing his or her job.

III.   PRO ET CONTRA

Benjamin Franklin [6] in London on September 1772 writing to his friend advised him in using the "pro et contra", or pros-and-cons method. In difficult decisions it is difficult, having under consideration all the reasons, where pro and con are presented to the mind at the same time. The reason obviously is that sometimes one set present themselves, and at other times another, the first being out of sight. In this way the various purposes or inclinations that alternately prevail, and the uncertainty that perplexes us. The solutions should be to divide half a sheet of paper by a line into two columns, writing over the one pro, and over the other con.

The method proposed has it own pros and cons. The pros are we have a rigor method. This approach minimizes the likelihood that critical factors have been missed. Assures emotional distance, as it can creates an "self-distanced perspective," in which the decision is viewed as an "external" problem to be addressed, easing the impact of the emotions surrounding the decision. And of course it provides familiarity and simplicity.

In the cons we may describe vulnerability to cognitive biases. The framing effect generally focuses us on evaluating two alternatives and a "thumbs up or thumbs down" scenario appears. This may provide us an overconfidence effect, since it is likely that many people assume a level of accuracy in their assessment of pros and cons that simply isn't there. And this creates an illusion of control.

As an overall result of using an analytical tool such as a pros-and-cons list we emphasize the objective, "just the facts" side of decision-making. Respectively such a tool deems to be critical for decisions, but only as a very high-level preliminary thinking aid.

IV.　　SWOT ANALYSIS

SWOT analysis [7] (or SWOT matrix) is an acronym for strengths, weaknesses, opportunities, and threats. This is a structured planning method that evaluates those four elements of an organization, project or business venture. Albert Humphrey of Stanford Research Institute in 1960 used it, although he did not claim the creation of SWOT, and the origins remain obscure. The major plus of SWOT analysis method is that incorporates both the internal environment of the focused organization or task with the external environment all in the concept of a strategic fit, by:

- Strengths: characteristics of the focused organization or task that give an advantage over others similar;
- Weaknesses: characteristics of the focused organization or task that place the it at a disadvantage relative to others similar;
- Opportunities: elements in the external environment that the focused organization or task could exploit to its advantage for, and
- Threats: elements in the external environment that could cause trouble for the focused organization or task.

So we gather in one place information about both the external environment and your organization's internal capabilities. This is crucial because it informs us both about goals and strategy, which makes us easier to achieve the right decisions.

In the advantages of SWOT analysis we may say that it is an instrumental applicable in strategy formulation and selection. Strong instrument best used when used as a guide, and not as a prescription. It can be helpful in providing watch on tool of our overall environment and thus help us recognize and exploit new opportunities faster. In the opposite direction we may also try and reverse our weaknesses. But the most valuable characteristic is that puts the time variable in to consideration. This helps us apply knowledge of the past, present and future. In other words we can use past and current data, and in there also include our future plans.

As limitations of SWOT Analysis drive us in an oversimplification. Since we ourselves present all the argument we may be subjective due to the existing degree of uncertainty in the decision making process. The future unknowns also represent limitation. But, no matter the limitations again the biggest plus still is the time inclusion in our decision making process.

V.　　DISCUSSION

If we google robots and taxes we get more than one million results. The great majority of all those results either go pro or con. Meaning they declare a positive or negative position. The real situation at the end will be neither pro nor con. It will be as always to focus on who has the maturity to be the first in exploring new opportunities. It was never the one who was best protected by future and even immature threats to be remembered by the history.

In pure financial terminology a robot, like a computer may be should be considered as capital investment. From the economical point of view, similar investments should not be the focus of taxation in order to promote bigger production. Even further for the specific case of robots, investments in robots for sure add in productivity.

There are focused areas that any delay in robots deployment, like in health care and transportation, would be dangerous in maintaining social stability. We all know that the health-care, and transportation costs grow rapidly. Looking as example the medical robots we see they take an even more crucial role in precision surgery as well as in the case of automated, repetitive procedures. Robots like these of course can improve the efficiency of hospitals and reduce the cost of providing health services as well as improving their quality. Saving resources by healthcare professionals in providing the medical service could provide more opportunities the same resources to be used in order to enhance prevention and even to invest in the direction of improving the qualifications of these healthcare professionals [7].

Even more the very use of these medical robots requires additional training and preparation for medical professionals. Only in this way the level of patient protection can be guaranteed, namely, the professional competence of doctors and medical professionals, be guaranteed. In other words, for instance the minimum professional requirements for a surgeon who will operate a surgical robot must be guaranteed.

The master / slave model or the so-called principle of observed robot autonomy must be mandatory complied with medical robots. In other words, tasks like the initial planning of the treatment, as well as the final decision to conduct it, should always remain at the discretion of the surgeon [8].

The users of the medical service themselves also need training. There is a growing trend of medical professionals resolving problems, deriving by self-diagnosis with the use of robots directly by end-users.

But, the most important is not what we know, rather than what we really we do not know yet. We do not know its scale, scope, and complexity. So the transformation, which will be necessary, will be unlike

anything humankind has experienced before. We did experience similar transformations, but we cannot foresee this one.

We currently are in a transitional phase, where areas like ICT, big-data, 3D printing, biological and molecular engineering are in high priority. Those developments will create new technologies and affect or even develop whole new industries. The potential is great in communications, in virtual and enhanced reality systems, voice, and image recognition, and artificial intelligence in general will further expand the economy, and enable the evolution of entirely new kinds of jobs, we eventually cannot imagine now. The increasing demand for configure-to-order and individualized products supported by the rise of 3D printing will revolutionize the production, transportation and logistics of any physical goods we know at them moment.

All involved societal systems, including education, economic and social safety structures, and pension systems, require to be considered. Thus, it is necessary that we begin to elaborate a whole new system or even systems that will support this global transformation and enable it to work for people, and be a positive improvement for the state of the world as a whole.

Although we do not know yet how robots will affect us, one thing is clear, the response to the coming transformation cannot be partially implemented. The response must be integrated and comprehensive. In this direction it must involve all stakeholders of the global policy making mechanism, including both the public and private sectors, of course the academia and civil society. It is not legal policy makers, and taxation experts should handle such a matter.

VI.   CONCLUSIONS

In brief was presented the purpose of taxation. Also the ideas of fairness and the applicability in legal terms of taxation over "electronic persons" were discussed. Two instruments for strategic decision-making were described and discussed in order to define the value of time, as variable, in many cases. In conclusion, the topic of robots taxation is very broad. The definition of the "electronic persons", may be the first legal step in the direction of trying to pose fairness in this quite fuzzy issue. But, the most important is to try to use our previous experience and focus on how we could best recognize and exploit new opportunities, rather than be protected from coming, even immature threats.

REFERENCES

[1]   Peter M. Asaro, What Should We Want From a Robot Ethic?, International Review of Information Ethics, www.i-r-i-e.net, ISSN 1614-1687, Vol. 6 (12/2006)
[2]   Gianmarco Veruggio, Symposium Chair, ROBOETHICS ROADMAP (http://www.roboethics.org), The ethics, social, humanitarian and ecological aspects of Robotics, 2004
[3]   Bernheim, Douglas B., "Taxation and Saving," in Alan J. Auerbach and Martin Feldstein, eds., Handbook of Public Economics, vol. 3 (Amsterdam: North-Holland), 2002
[4]   European Parliament's Committee on Legal Affairs, Policy Department for "Citizens' Rights and Constitutional Affairs", EUROPEAN CIVIL LAW RULES IN ROBOTICS, http://www.europarl.europa.eu/committees/fr/supporting-analyses-search.html, 2016
[5]   European Commission, tabled in April 2013, new corporate social responsibility (CSR) rules to encourage more responsible behavior by large companies, 2013
[6]   Brett & Kate McKay, How to Make a Decision Like Ben Franklin", Money & Career, Professional Skills, 2009
[7]   HBR Tools: SWOT Analysis, Harvard Business Review, 2015
[8]   Rodrigo SIQUEIRA-BATISTA, Camila Ribeiro SOUZA, Polyana Mendes MAIA, Sávio Lana SIQUEIRA, "ROBOTIC SURGERY: BIOETHICAL ASPECTS", https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5225874/, 2016