

# UNEMPLOYMENT AND INEQUALITY

IN THE TIME OF COVID-19

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Editors

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# **INEQUALITY AND UNEMPLOYMENT IN THE TIME OF COVID-19**

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*Edited by Sinan Alçın, Humberto Merritt, Emilia Alaverdov & M. Mustafa Erdoğan*

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### **Inequality and Unemployment in the time of Covid-19**

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## Introduction: Unemployment and Inequality in the time of Covid-19

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The COVID-19 pandemic has affected the current and future well-being of many people and raised renewed concerns about multiple kinds of inequality both within and between countries. Temporarily closing the economy led to a significant deterioration in the poverty rate and raised preexisting and current social inequities, reinforcing disadvantage, especially among groups most devastated by the Great Recession of 2008. Young, less educated, and low-skilled workers, as well as women, are the most affected by the COVID-19 shock in terms of job loss rates. The differential impacts were especially acute at the height of the pandemic in 2020. Job opportunities during recovery were mainly out of reach of historically marginalized groups with devastating effects on their psychological, economic, and social well-being.

The effects of the COVID-19 pandemic are serious, widespread, and felt all around the world. The numbers paint a grim picture. Almost half of the world's 3.3 billion employees are threatened with a loss of livelihood. Tens of millions of people are at risk of extreme poverty and many can die of starvation (ILO, 2020). COVID-19 poses threats such as increasing inequality everywhere. According to WHO (2022, July 6), around a tenth of the global population (828 million in 2021) were undernourished as the pandemic disrupted economies, labor markets, and supply chains, and increased food prices since the outbreak of the COVID-19 pandemic.

According to the latest State of Food Security and Nutrition report (FAO, 2022) of the UN, the world is moving further away from its goal of ending

hunger, food insecurity and malnutrition in all its forms by 2030. After remaining relatively unchanged since 2015, the proportion of people affected by hunger jumped in 2020 and continued to rise in 2021, to 9.8% of the world population. This compares with 8% in 2019 and 9.3% in 2020.

In this crisis, food safety, public health, and employment and labour issues, especially workers' health and safety, converge. Respecting occupational health and safety practices, ensuring access to decent work, and protecting workers' rights in all sectors is essential to address the human side of the crisis. COVID-19 simultaneously exposes structural inequalities in all areas. Among those most affected are workers in the informal economy, young people, and women. Without the means to earn an income during the closures, many workers in the informal economy could not feed themselves and their families. Low and irregular incomes encourage many of them to continue working in often precarious conditions, thus putting themselves and their families at additional risk.

Women are harder hit economically by the pandemic as they make up a large proportion of the workforce in sectors heavily affected by COVID-19, including lodging and catering services, as well as in frontline professions such as health and social care. With the closure of schools, they had to take on more care tasks at home. Whether from job losses or school closings, the pandemic threatens to undo decades of progress on gender equality.

2.7 billion people have not received any public financial support to cope with the economic devastation caused by the coronavirus pandemic (Oxfam, 2020, December 15). Economic recovery is likely to be uneven, leading to further inequality in the years to come. Assessing the impacts of the COVID-19 crisis on societies, economies and vulnerable groups is essential to inform and adjust government responses to recover from the crisis and ensure that no one is left behind in this effort.

This edited book aims to identify the inequality and unemployment consequences of COVID-19 and investigate what can be done for a better World. The works are arranged into fourteen chapters. In the first chapter entitled "*COVID-19 Pandemic: An Economic Disaster, A Philosophical Challenge*", unlike many other social scientists, Justina A. V. Fischer develops a positive perspective based on the philosophy of Aristotelian Ethics. The idea developed in the chapter is that the coronavirus pandemic interrupts and distorts the work-consumption treadmill, enabling people to live out those talents and capabilities that make people human, lifting them beyond the stage of an animal with only basic needs. According to

the author, this societal development continues under the influence of the energy crisis and rising inflation in the year 2022.

In the second chapter entitled “*Was Teleworking A Short-Lived Phenomenon? Evidence from the United States*”, Humberto Merritt explores the recent evolution of telework (or remote work) in the United States by posing the following research question: How has telework evolved in the United States after its rapid adoption because of COVID-19? The author argues that due to the ongoing economic recovery most American workers are returning to their in-person activities because teleworking was a temporary solution with little incentive to remain as mobility restrictions were lifted. Nevertheless, there is a trend towards a so-called hybrid work modality. According to the analysis of the paper, remote employment is most advantageous for knowledge-based workers,

In the third chapter entitled ‘*The Increasing Importance of Gender-Responsive Planning and Budgeting in the Time of COVID-19*’, Gamze Çimen ve Coşkun Karaca in their chapter deal with the effects of the COVID-19 epidemic on gender inequality. The authors discuss the gender-responsive policies implemented in some selected countries along with Turkey and emphasize the importance of gender-responsive budgeting since it offers equality which is the right of every segment. Their analysis of data from country examples for gender-responsive budgeting suggests that there is still a long way to go before current budgeting can reach a satisfactory level worldwide.

In the fourth chapter entitled “*COVID-19 and Social Policies for Working Life*”, Yeşim Çam and Coşkun Karaca investigate the policies implemented in Turkey to compensate for the economic losses and social problems caused by the COVID-19 epidemic. Based on the available data, the authors observe that the short-term measures implemented by the government were to support businesses, reduce social difficulties, and stabilize income and employment. Nevertheless, the authors suggest that these policies were not good enough to mitigate negative effects. The end result is that the economic and social problems caused by the epidemic will have permanent effects on employment, income and working conditions.

In the fifth chapter entitled “*Georgian Social Policy under the Conditions of the COVID-19 Pandemic and Information Warfare*”, Emilia Alaverdov and Sopo Chkopoia discuss the consequences of the Covid-19 pandemic on the socio-political and economic situation of Georgia. They also review the effective steps and packages of social programs implemented by the country at the national level to ensure the well-being of citizens and show the need to increase communication between society and state institutions,



especially against the background of information warfare, which they claim it is a real challenge for Georgia. The authors focus on particularly the main problems that arose in the healthcare and education system and bring several recommendations for improvement.

In the sixth chapter entitled “*The Social Aspect of the Circular Economy*”, Ardita Bytyqi and Shenaj Hadzimustafa present a systematic literature review of how many social aspects are studied and integrated into the circular economy concept. The authors argue that many social issues are related to the topic and the perspectives on the circular economy’s impact depend on the affected stakeholder groups. Yet, there is still a need for more profound research regarding the social impacts of the circular economy. They conclude that more real-world case analyses are necessary to promote the growth of circularity as a process. They also observe that the transition process would benefit by comparing the outcomes of the evolution from the linear model to the circular economy once the implementation has started.

In the seventh chapter entitled “*The Economic Policies Pursued in Türkiye after COVID-19: An Evaluation in Terms of Heterodox Stabilization Programs*”, Tülin Altun and Coşkun Karaca analyse the recent performance of Türkiye’s economy with additional scrutiny of the current impact of the COVID-19 pandemics. The authors observe that the measures taken by the Turkish government to prevent the spread of the epidemic deepened the crisis and thus forced the government to adopt a new economic model based on a low-interest and high-exchange rate policy. They conclude that, despite the economic progress that Türkiye has experienced in recent months, the increasing inflation has reduced the purchasing power of wage earners, provoking a deterioration in the national income distribution. Altun and Karaca argue that it would have been possible to lessen the social damage if there would have been financial incentives, such as grants or competitive loans, to high technology, high value-added industries.

In the eighth chapter entitled “*The Effect of Changes in Monetary Policies after the Pandemic*”, Melih Özçalık and Ece Demiray Erol examined and evaluated the effects of the Covid-19 epidemic in the banking and finance sector and the policies implemented all over the World in a general way. Their observation is that both developed and developing countries’ central banks have used instruments such as liquidity supports, asset purchases, clearing lines, policy rate cuts, credit facilities, term financing opportunities, foreign exchange intervention, required reserve reduction and capital requirement reduction. With these instruments, central banks aimed to reduce the volatility in the markets.

In the ninth chapter entitled “*The Political Economy of State Intervention in Child Labor*”, Pelin Vildan Kökçü discusses the state intervention on child labor. The author emphasizes that child labor is a concept that is shaped in the hands of adults, and the dynamic that determines the essence of state intervention in child labor is a matter of class and mode of production, which is also the main determinant of child labor and state intervention. It was concluded in the chapter that child labor was intervened according to the requirements of capital, especially in the context of the modern state and within the framework of capitalist mode of production and relations.

In the tenth chapter entitled “*The Right to Self-determination – Challenges of Modern International Law (Case of Kosovo)*”, Mariam Jikia and Maka Julakidze make its retrospective from the history of Kosovo. Particularly it starts with the year 1912 and continues up to the current days. It analyzes the faced internal and external challenges of Kosovo as an already independent state. The authors highlight that Kosovo's president shows us that even having gained independence and recognition from the majority of United Nations member states, the country may undergo quite a tough period. It is obvious that recognition is very precious and vital for any country, however, it cannot be a kind of problem-solution guarantee for it.

In the eleventh chapter entitled “*Robotics in the Renewable Energy Industry Sector – Review*”, Blerita Abazi Chaushi and Agron Chaushi provide an outlook of the use of robotics in the renewable energy industry sectors. The study pinpoints that robotics plays a critical role in enhancing the renewable energy industry sector and is becoming a critical factor to the sustainability and survival of the energy industry. According to the findings of the study, robotics in renewable energy market is segmented by type, application, and by region. The authors of the chapter provide a projections for years 2030 for robotics demand.

In the twelfth chapter entitled “*Learning after Doubt in Decision Making*” Oscar Pérez Veyna and Inés Angélica León Sigg deal with the learning process during the pandemic COVID 19 in Mexico. They analyze the results of a local strategy to monitor the spread of the virus and the methods to cope with it. The chapter states that despite the serious global challenge the country had a great contribution from the scientific and economic fields. It also shows that in economically developed countries people, especially the elderly population suffer more than in poor countries.

In the thirteenth chapter entitled “*Measuring the Efficiency of Country Economies by Data Envelopment Analysis (An Essay on Turkey, Middle East and North African Countries)*”, Tuncer Özdil and Anil İlkem Aslan claim that all countries must use their resources effectively and efficiently because

of the widespread demand to increase welfare through economic growth. They draw on the data envelopment analysis method (DEA) to measure the socio-economic performance of nineteen nations in the Middle East and North Africa by using data from the World Bank. According to the empirical results, MENA countries differ in their input efficiency, asking for a more practical application of their resources. They suggest that public policy must be developed to improve macroeconomic results.

We believe the chapters in this edited book will generate ideas for future research efforts as well as identify inequality and unemployment consequences of COVID-19 and investigate what can be done for a better World. Our expectation is that chapters in this book provide scholars, practitioners, business executives, and students with current information and new perspectives.

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# 1

## THE COVID-19 PANDEMIC: AN ECONOMIC DISASTER, A PHILOSOPHICAL CHALLENGE -A PHILOSOPHICAL ESSAY<sup>1</sup>

*Justina A.V. Fischer<sup>2</sup>*

### ***Abstract***

*The COVID-19 pandemic and the lockdown policies in the years 2020 and 2021 have exerted economic, social, and psychic implications for most people. The reception by social scientists is almost exclusively a negative one; in this essay, a contrasting, more positive perspective is developed, based on the philosophy of Aristotelian Ethics. The idea is developed that this coronavirus pandemic interrupts and distorts the work-consumption-treadmill, enabling people to live out those talents and capabilities that make people human, lifting them beyond the stage of an animal with only basic needs. This societal development continues under the influence of the energy crisis and the rising inflation in the year 2022.*

*Keywords: COVID-19, happiness, treadmill, philosophy, ethics, capability, Aristotle*

### **1. Introduction**

The years 2020 and 2021 brought about many changes in all realms of people's lives – societal transformations that have been accelerated and fostered by the disease COVID-19 and the pandemic it created, and the corresponding policy responses to it. To many of us these transformations appeared as a threat, endangering the way of life we had been used to living before, both at the societal level and the individual level. This negative perspective on these changes has been shaped by experts of social sciences, economics and psychology. In this essay, this negative perspective will be challenged by an alternative, more positive interpretation: a philosophical viewpoint on these changes.

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<sup>1</sup> This essay is dedicated to my mother, who died on the 24th of July 2022. On her day of death, we both discussed the consequences of the COVID-19 for humanity and its metaphysical implications. This essay is in part the result of this discussion.

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## 2. The Negative Consequences of the COVID–19 Pandemic

In particular, the following observations gave rise to the development of this rather negative perspective on the consequences of COVID–19 pandemic and of the lockdown policies to combat the disease: First, these policies led to increased unemployment among employees, particularly in the service sector and among freelancers – about 400 million full-time jobs worldwide were lost due to the pandemic (e.g., McKeever, 2020). It also led to reduced working hours in the classical productions sector (in countries where the government paid subsidies to the employers to keep employees in the pandemic-affected sectors in employment). The lockdown policies resulted in the shutting down of shops in cities, in the reduction of public transport facilities, in the temporary closing down of schools and kindergartens – sectors in which physical contact takes place on a regular basis. These policies also forced a large number of employees and freelancers to work from home (so-called 'home office') and resulted in the rise of homeschooling and other forms of online teaching. In addition, international trade linkages suffered by the distortion of transportation routes, transnational supply chains and the closing down of harbors and airports (e.g., Strumpf, 2020). Some governments even illegally confiscated medical products destined for export at the airport, just a few seconds prior to departure (as happened in both USA and China). In consequence, transnational export and import of consumption goods, intermediary goods and resources became an extraordinarily difficult enterprise. A famous example was the global computer chip crisis, the export of which was partly temporarily restricted by national governments or the production of which suffered from the shortage of intermediary goods: Urban legend says that German car producers bought up whole production lines of high-end washing machines in order to reuse the built-in chips for their cars. The automotive sector went into crisis in both Great Britain, Germany, and USA during the pandemic (e.g., Wikipedia, 2022); for example, according to Wayland (2020) sales in the USA declined by 40% . Overall, the economies of the first and second world shrank substantially (as measured by GDP) – the economy of the EU itself by 6% to 8% in 2020 alone, and in the first quarter of 2020 by 11% (e.g., EIB, 2021): the pandemic is said to have caused the second largest global recession in recent times (Kaplan and McFall-Johnsen, 2020). An overview of these macroeconomic effects of the COVID-19 pandemic is best given in a well-investigated article “Economic impact of the COVID-10 pandemic” published on Wikipedia that cites more than 300 sources to support their claims (see Wikipedia, 2022).

These negative consequences occurred not only at the level of macroeconomy, but affected also, and the more, each of us individually, young and old, working and non-working, man and woman likewise.

About one third of the global population were in some kind of lockdown during the years 2020–2021, varying in duration, starting points and ending points (e.g., Kaplan and McFall-Johnsen, 2020), which strongly affected their daily lives. For example, home office, homeschooling, and the closing down of leisure facilities made families spend more time together with lesser opportunity to escape to outdoor activities (be it to work, school, gym, shopping centers, etc.); the result was an increased number of (recorded) domestic violence and marital quarrels. The closing down of shops in the city centers reduced substantially opportunities for young people to spend their leisure time shopping – a much-loved self-esteem bolstering activity in our consumer society –; instead, the volumes of sales over the internet increased substantially. The closing down of institutions of culture (museums, theaters, movie theaters) and restaurants reduced the opportunities to have social contacts outside the realm of family. Even on the job, being compelled to work from home brought about an unprecedented experience of loneliness for many employees. To many, the worst experience during the lock-down period was that lockdown-induced unemployment and reduced working hours let the financial resources shrivel for the affected, causing financial stress for themselves, for their partners and for their families.

### **3. The Alternative Perspective of Philosophy**

However, this rather negative evaluation, rather shaped by the viewpoint of social scientists, can be complemented or even substituted by a more positive interpretation of these lockdown-induced constraints when taking on the perspective of a philosopher. For example, regarding the difficulties in maintaining social contacts: the negative aspects of having fewer social contacts in general, – it can be replaced by the positive aspect of re-focusing on a few specific social contacts instead, that implies a focus on true friendships instead of one on the myriad of so-so acquaintanceships with colleagues and other contemporaries. Another example, this time regarding constraints on indoor sports activities: this negative aspect of closed recreation centers and sport studios, it can be replaced by the positive aspect of carrying out sports activities outdoors in place of indoors, in the nature, in plain fresh air, – sports activities such as biking, walking, jogging, inline skating. Another example, regarding family life: in place of focusing on the few additional cases of domestic conflicts one may consider instead the fostering of family ties in general, by family members simply spending more time together.

### 3.1. COVID-19 Distorts the Hedonic Treadmill

From a metaphysical-philosophical perspective, the most important positive development induced by the lockdown policies is the distortion of the work-consumption-treadmill. Based on the idea of a decreasing marginal utility of consumption, the additional happiness achieved by consuming more (more goods or more expensive goods) gets smaller the higher the starting level of consumption is. For this reason, people get trapped in the work-consumption-treadmill – and most people in consumer societies are – as they keep trying to achieve higher levels of happiness by continuously increasing their consumption, that is by continuously increasing their income (through working harder or more), which finances their expenses. However, because of the decreasing marginal utility of income (consumption) full satisfaction can never be achieved. This phenomenon is also called the Easterlin-paradoxon, the existence of which can be empirically demonstrated by comparing cross-national data on per capita income and national averages of happiness (Easterlin, 1974). The work-consumption-treadmill or so-called hedonistic treadmill of modern consumer societies leads to self-exploitation of workers at the expense of their health and their family life.

The COVID-19 pandemic and the economic-social lockdowns distorted this work-consumption-treadmill in two ways: First, it reduced the amount of money available for buying consumption goods and lowered the daily consumption levels of many people. Second, it lessened the number of working hours for freelancers, for the newly unemployed, and for those working on short time. Through these means the COVID-19 pandemic provided an opportunity of dishabituation, of forced withdrawal – like a former drug addict people had to learn to consume less of the drug ‘consumption’. The closing down of shops in the cities equally helped to reduce consumption and also to avoid developing feelings of deprivation and alienation when passing by these shops, without having the financial means to buy something; the lesser social contacts provided less opportunity for social and status comparisons, based on observed consumer behavior.

My claim as philosopher is that, overall, the COVID-19 pandemic and the lockdowns provided an opportunity to start living a better life than before, that is to live a good life as a true human. How can we dare to have such a positive view on the consequences of the COVID-19 pandemic and the lockdown policies?

### 3.2. Living an Unhappy Life of Slaves in a Consumer Society

To the Greek philosopher Aristotle, leading a good life means living out the potential a human life entails – which goes far beyond consuming and earning money only: a good life and a happy life consists in the actualization of the human potentials – in particular, in the actualization of those potentials that make humans distinct from plants and animals. For a further understanding of what makes us human, one may take a look at the structure of the human soul according to Aristotle, as described in his path-breaking book *The Nicomachean Ethics*, which consists of 10 rather self-contained chapters; the human soul is explained at the end of the first two chapters (chapters 1 and 2). According to Aristotle, the human soul consists of three parts: The vegetative part, the animal part (as I like to call it), and the logical part. Each part relates to specific abilities and potentials that can be brought to actualization in the real world. The vegetative part (*to phytikon*) is concerned about growing, feeding and caring for the body; for its actualization food, shelter, clothes, a bath, etc. is required. The animal part (*to orektikon*) relates to thriving, urges, desires, and needs – it relates to what drives a person or an animal to do something, to become active, to get engaged in action. The animal part also relates to emotions, perception with the senses, and physical movement (*pathos, aisthesis, and kinesis*). In consequence, a person who lives out the vegetative and animal parts of her soul engages in activities of consuming food, shopping clothes, going to the gym, spending money on HealthCare, – expressed differently, most people trapped in a work-consumption- treadmill actualize only the two lowest parts of the human soul, living a life more similar to that of an animal rather than to that of a true human. In classical times, such a life was considered the life of a slave, meeting only the basic needs of a human life.

The part of the human soul that separates us humans from animals is the so-called logical part (*to logon echon*) which Aristotle describes in book 6 of the *Nicomachean Ethics*. This part relates to prudence, that is the ability to reason, to look at the pros and cons of an action, to evaluate consequences. It also relates to activities of the pure intellect such as doing science as well as using one's intuition, which Aristotle considered necessary for achieving wisdom. Prudence is needed for developing worthy goals, choosing the right means, making the right decisions. In other words, prudence is needed for ethical acting – which can take place in relations to other person's only, that is within society, not in solitude. Ethical actions are always political actions – they are in the field of politics itself, in the field of family life, all in the fields of friendships, that is among friends.



### 3.3. Living a Good Life Means Living Out Your Potentials

From this it follows that a truly human life is either a contemplative or an ethically active life – as it is the logical part of the soul which dominates here, that part which makes humans human and which makes us humans differ from animals. In other words, to Aristotle to be human means to use the human logic – one's prudence or one's intellect. Using that logical part of the human soul is the function of man in this world – it is the *ergon* of humans, their specific task and obligation, but at the same time it is also what will bring them true joy and fulfillment, that is true satisfaction with their lives. In consequence, a happy and fulfilled life can be achieved through the following activities: Working as scientist, doing philosophy, worshipping and meditating, doing fine arts, engaging in cultural activities, or, alternatively, by practicing ethics – that is by doing politics, caring for friends and family, doing social work, working for the community. If one exercises that part of the soul where her specific talent lies by doing things for which she has that talent for she will experience pleasure: the search for pleasure, as laid out by Aristotle in book 10 of the *Nicomachean ethics*, will lead everybody to do what she is meant to do, according to the structure of her individual soul. Hence, true pleasure is not found in consuming goods and comparing social status (as economic theory suggests), but in 'doing your own thing', that is in living out your creative, intellectual, or ethical potential(s).

Returning to the main argument of the paper, the lockdown that followed the COVID-19 pandemic gave us the opportunity to set a new focus on how we should live our lives to achieve true happiness: It had and still has the potential of freeing us from the treadmill of earning money to consume more and more – a hedonic treadmill which gives us the illusion of moving forward at the physical level while, in reality, it disguises our stagnation in life at a psychic level: First of all, many persons experienced a reduction in income through unemployment or a reduced working hours because of lower levels of output in the industry – such persons were forced through their shrinking earnings to lower their levels of consumption. Second and in addition, even those persons who did not experience a decline in income through unemployment or the like were hampered in spending their money on consumption goods: the lockdowns took away many spending opportunities by closing down shops in city centers and similar locations in general: since shops, restaurants, cinemas, shopping centers, had all been closed down, seven persons with an unaffected level of income were forced into abstention of (luxury) consumption goods.

#### 4. The COVID-19 Pandemic as Dehabituation Training

Obviously, the positive aspect of the COVID-19 outbreaks and the lockdowns that followed lies in its potential dehabituation and detoxication effects: Potentially, through this substantial change in lifestyle, it may have become apparent to consumers that consuming goods for its own sake – more goods, more expensive goods, more exclusive goods – does not provide true happiness. Instead, the lockdown policy brought about a new awareness of the true value of some consumption goods, e.g. of leisure time activities, the unrestricted access to which had been taken for granted in pre-COVID-19 times: for example, experiencing arts in the museums and going to the cinema, dining out in restaurant, having a good coffee in the bakery in the morning or having a beer in a bar watching the sunset – the true pleasures of rather simple enjoyments and the contribution to one's happiness of those little liberties in life, which we had all considered as almost natural part of a modern life. In other words, the lockdowns have taught us to appreciate the existence of leisure-time-related consumption goods (culture, restaurants, etc.), that is to consume these goods not any more on a daily basis but less often, but then with a higher degree of awareness, making their consumption a 'special event' in life, leading to greater enjoyment and thus happiness.

Another example for this detoxication effect is that the lockdown policies forced everybody to draw a line between simple acquaintanceships and true friendships, and it also showed us the importance of family life for our well-being. According to Aristotle, spending time with friends and family is part of living a politically active life, with the opportunity of leading an ethically good life and, as such, providing one way to find satisfaction in life. The (shockingly unexpected) strictness of the policy responses to the COVID-19 pandemic, however, made many of us remember that one should always keep track of politics and keep controlling the actions of politicians – the pandemic turned many of us into 'political' beings again, it turned us again into good citizens, practicing politics through engaging in the political debate on the political course society should take. The lockdown also brought about a new respect for nature: nature recovered substantially through reduced air traffic, ship traffic, car traffic, less tourism, and less travel – instead, people started to experience nature in new ways, closer, more intimate, e.g., through doing sports in nature, living out their family lives in nature, meeting friends in nature (replacing clubs and restaurants), partying sitting on benches 'en plain air' in nature. Such deep experiencing of nature, such immersion into nature can be viewed as a form of meditation and, as such, also as a way to exercise the logical part of the human soul.

From this Aristotelian perspective on the lockdown, even working from home loses its threatening character: working in the home office, in isolation from your colleagues at work, is a perfect test to see whether or not your money-earning job is in congruence with your own individual talents and potentials – only in this case one will experience joy and pleasure with the job one is doing. However, in the second case, if one is not, the COVID-19 pandemic provided a great opportunity of finding out if one should or should not change one's occupation. According to Aristotle, feeling pleasure with what one is doing (as occupation or as daily activity in general) ensures mastership and true enjoyment that helps develop the good aspects of one's soul.

#### 4.1. Two Distinct Concepts of a Good Life: Aristotle versus Adam Smith

Central to having a good life is leading an ethically good life. What we have learned so far is that a life consisting of pure consumption and working for financing it does not satisfy the criteria of an ethically good life – consuming goods is an activity that focuses on one's own needs and necessities only, neglecting the needs of other members of society. Indeed, it was Adam Smith's concept of the so-called invisible hand which he describes in his book *The Wealth of Nations* (1776) that fostered the idea that when making decisions to buy (to consume) it was the best for society, the well-being of society and the individuals living therein, NOT to consider the needs of others in business decision-making. In the specific case of a sales transaction, one should not consider the needs of the vendor or salesperson. This consideration shows that well-being as thought of by Adam Smith and well-being as defined by Aristotle are two completely distinct concepts: while A. Smith defines a good life by the level of satisfaction achieved through consumption (based on Jeremy Bentham's idea of seeking pleasures and avoiding pain during one's lifetime); to Aristotle true well-being is found when a person achieves living out her potentials and talents, that rest in her non-animal part of her soul, waiting for their unfolding into reality, waiting for their evolution into the sphere of material life.

Today, in summer 2022, the pandemic seems to be far away. Infection rates are on the decline, as is the COVID-19-induced death toll. Most of the restrictions on people's lives have been lifted: society has returned to ordinary work and schooling; universities have been re-opened – but has life returned to some pre-COVID-19 normality? Not at all – fortunately! The two-year-lasting dehabitation from consumption has put us on an alternate consumption path, creating alternate patterns of behavior, having caused some substantial changes in people's behavior: For example, many

people have reduced the number of superficial social contacts, instead focusing on true friends. People are going out less, are consuming less just for pleasure – there are no overcrowded shops with giggling tweens any more. People are less eager to make contact with strangers, keeping some safe distance, avoiding physical contact. The industry has also reacted by repeating designs and production lines of the previous season. Regarding the means of transportation, the demand for bicycles has jumped to an unprecedented high so that traders are talking of having one of the best profitable years in which they do business; in contrast, the demand for classical cars is on the decline – the times of cars serving as status symbol, as metaphor of technological progress and of economic prosperity, seem to have gone since the COVID-19 pandemic.

#### **4.2. The Ongoing Crises Keep Transforming Our Societies**

This process of transformation is being continued and enforced by the Ukrainian-Russian conflict that started in late spring 2022, just when people thought that they had finally overcome the COVID-19 pandemic. The war in the Ukraine generated a political response by the EU to the Russian invasion: a ban on Russian imports and a ban on exports to Russia. In consequence, an energy crisis emerged, just as the inflows of Russian gas and coal were put to a total stop. Through the effects of substitution the price of fuel equally rose to a new historical high, while the missing inflow of coal from Russia made the use of electricity to run machinery in households and industry substantially more expensive. Overall, all forms of energy production and resources for energy generation became negatively affected. Starkly rising prices of energy imply a tendency for inflation: energy makes up the largest part of production costs in capital-intensive (automated) production – and in industrialized countries even artisan shops work relatively capital-intensive as compared to the simple production technology in developing countries. Rising prices also cause higher transportation costs, and increasing transportation costs imply higher costs at all stages of the production chain, and hence for the production of goods in general. Expressed differently: higher prices of energy make most consumption goods substantially more expensive, be it products of daily use or be it luxury goods.

To put simply, higher energy prices exert a devaluation effect on people's income, even though on paper their income may have stayed the same or even show rising numbers: higher energy prices lower everybody's purchasing power. The prices of fresh vegetables and other food items have risen by 20% to 30% compared to the price level one year ago. Again, the war between Russia and the Ukraine proved to be another shock to our current economic and political system (with a political response enlarging

this shock to an out-of-system event), so that it becomes difficult if not impossible to maintain the pre-war (and pre-Corona) level of consumption. If people tried to return to a pre-COVID-19 ‘normality’ after the occurrence of the much less deadly coronavirus variant Omikron, the war in the Ukraine made such attempts to return to such previous patterns and attitudes completely obsolete. It is predicted for the coming winter that the price level will continue to rise, causing an even starker change in people’s consumption patterns: Possibly, some people must as much as possible keep hold of their money to be able to pay for the heating, and some people will start using electric appliances less often. While this development appears to be rather negative to those affected, such a shock provides, again, implicitly another opportunity of escaping the consumption-work-treadmill, by forcing us to get used to lower levels of consumption. The devaluation of money coupled with higher energy prices also implies that leisure time activities become relatively more expensive (in real terms) – again, this systemic shock teaches us to appreciate more and to experience more intensively certain activities which we cannot afford any more to carry out on a daily basis, as we might have been used to before the war and before the COVID-19-crisis.

Finally, the rising costs of energy and transportation distorts international trade linkages in a similar way compared to what the COVID-19-induced lockdowns did, when import and export became simply forbidden or strongly restricted by state legislation. While the various lockdowns since 2020 brought some international trade roads to a simple standstill, leading to great difficulties to re-start them again after two years of shrinking international trade volume, nowadays, in mid-2022, the rising costs of transportation exert an additional and even more transforming effect: they destroy the basis of cross-national production chains. Global supply chains (e.g., the well-known example of a T-shirt made from cotton from USA, woven in India, sewed in Vietnam, sold in Germany) need very low transportation costs in order to maintain their profitability – interestingly, the classical models of international trade (e.g., the Heckscher-Ohlin model, the Ricardo model, etc.), all of them abstract from the costs of transportation, setting them at a level of zero. However, in reality, increased transportation costs will lead to a regionalization of a formerly globalized world economy – the splitting up into trade blocs, as it has already been predicted by economist Paul Krugman in the 1990ies (see Krugman, 1991). From a positive perspective, people will consume more regional products and possibly become more aware of the ecological footprints these internationally traded and globally produced goods entail. Potentially and hopefully, people will start buying less imported goods (as their prices increase overproportionally compared to regionally traded and produced goods), preferring more locally produced ones. By this change in

behavior, people will enter a positive cycle of increasing the demand for locally produced products, while at the same time reshaping the global economy by breaking it up into regional trade blocs. And in case people do consume imported goods from far-away countries (e.g., a pineapple), they will do so on rare occasions only and then with some respect for the high value of this special good, enjoying the rareness of such an event.

## 5. Conclusion

To me as a philosopher it seems that each of the three events that shaped our world since 2020 – the lockdowns to combat the COVID-19 disease, the Ukrainian-Russian violent conflict that produced an energy crisis, and the increasingly accelerating inflation – each of it is meant to set us all on a new path of how to live our lives: on the one hand, a path of enjoying our lives through a deliberate and conscious consumption in place of some binge consumption, consuming without limits until breakdown; on the other hand, our future life is not a life without consuming ‘luxury goods’ or a life of being deprived of private property or personal belongings as envisioned by early communists or even by the great Greek philosopher Plato in his classical utopian writing *Politeia* (engl., *The Republic*). This post-industrial, Aquarius age-type of conscious consumption is not shaped by some needs and desires (as triggered by the animal part of our soul) that translate directly into acting without prior reflection; instead, such conscious consumption is the result of a cognitively transformed motivation, putting our desire to consume into the context of our well-being through prioritizing the activation of those potentials and talents that make us all truly human.

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## 2

# WAS TELEWORKING A SHORT-LIVED PHENOMENON? EVIDENCE FROM THE UNITED STATES

*Humberto Merritt<sup>1</sup>*

### ***Abstract***

*In early 2020, the first coronavirus type 21 case, commonly known as COVID-19, brought the entire world to an economic collapse. The disease triggered a massive unemployment wave in the United States (U.S.) due to the high speed with which the pandemic unfolded. According to the U.S. Bureau of Labor Statistics, in early 2020, unemployment benefit claims ranged between two hundred and two hundred and eighty thousand per week, representing the fastest growth in new claims in U.S. history since 1971. Still, 40 million Americans frantically searched for jobs in the following twelve weeks. In addition, the Current Population Survey (CPS) reported that U.S. unemployment rose from 3.5 percent in February 2020 (its lowest in more than 60 years) to 14.7 percent in April 2020, the highest rate in 80 years. The enormous economic impact of COVID-19 was no different for the rest of the world, making the pandemic the worst health and socioeconomic catastrophe of the modern era. To face the rapid spread of COVID-19, many firms adopt teleworking as an alternative to on-site jobs. This option represented an excellent substitute for many workers; however, remote work seems to be abandoned as the pandemic has receded. This paper explores the recent evolution of telework in the United States by posing the following research question: How has telework evolved in the United States after its rapid adoption because of COVID-19? Given the exploratory nature of this research, the analysis will be restricted to the last two years. According to available statistics, the telework phenomenon seems to wane due to the ongoing economic recovery. We argue that most American workers are returning to their in-person activities because teleworking was a temporary solution with little incentive to remain as mobility restrictions were lifted.*

*Keywords: United States, COVID-19, ICT, labour market, employment, telework*

*JEL Codes: E24, J22, J31, O33, O35, N92*

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## 1. Introduction

The COVID-19 health crisis that began in the early 2020s exposed people's high dependence on on-site work. Mobility restrictions caused by the disease's quick spread prevented personal contact between colleagues and friends, disrupting almost all working routines. Before the pandemic, approximately 8 percent of office employees worked mainly from home (The Economist, 2021). By 2021 that figure rose to 50 percent in several countries. And governments faced the dilemma of controlling infections without stopping the economy, with teleworking emerging as a suitable support for keeping productive activities operative (OECD, 2021; Rothwell & Cabtree, 2021).

Since long ago, telework has been considered a substitute for on-site work due to relentless innovations in information and communication technologies (ICT). According to Cappelli (2021), the pandemic accelerated organisational changes, as remote working offered benefits to employers, such as lower expenditures on office space, a larger pool of candidates for recruitment, and reduced costs due to the expanded expansion labour market. However, workers' willingness to telework depends on their performance (and that of their organisations) (Tahlyan et al., 2022).

Regarding the current situation for teleworking, a question is worth posing: is remote work appealing to U.S. employees? Since COVID-19, some surveys indicate that only 5 percent of Americans worked from home before the pandemic. By May 2020 (with the health crisis already underway), the figure had risen to 62 percent. However, the latest available data suggest that only 10 percent of U.S. employees still did not go to their offices as of March 2022. Previous analysis of these percentages suggested that telework did not hurt labour productivity indicators in the United States (The Economist, 2021).

Although adjustments in employment patterns have been dramatic, there are different perceptions between employers and employees. According to McKinsey consultants, one concern for employers is that telework may have unintended consequences on collaboration and organisational culture in the long term because, in the new telework environment, the quality of cooperation may diminish as teleworkers lack the face-to-face contact that used to exist in the office (Lund et al., 2021). Besides, the risk of weakening inter-organisational collaboration also rises when the workforce becomes tired of continuous teleworking. Rothwell & Crabtree (2021) argue that the threat of layoffs resulting from COVID-19 was strongly related to income and job quality in the year before the pandemic. They note that nearly half of the lowest-income workers were fired in 2019 because of the

pandemic compared with only 11 percent of workers in the top rank of the income distribution. However, on-site jobs returned to the previous level once the crisis receded. Also, companies are pressing their staff to return to the bricks-and-mortar site as soon as possible. One exemplary case is Tesla Motors, whose boss Elon Musk has ordered staff to return to the office full-time, declaring that remote work is no longer acceptable. He stated, "everyone at Tesla is required to spend a minimum of 40 hours in the office per week<sup>2</sup>".

This study explores how telework evolved in the United States in the aftermath of COVID-19. Two years after the outbreak, we aim to investigate whether telework was a short-lived phenomenon by examining the U.S. labour market from May 2020 to May 2022. We argue that most American workers are returning to their offices because working from home was a temporary measure with little grounds to stay once the health crisis started to wane. The analysis draws on the Current Population Survey (CPS) from the U.S. Bureau of Labor Statistics. The chapter is structured in four sections, including the introduction and conclusions. The following section defines telework.

## 2. Origins and Definitions of Telework

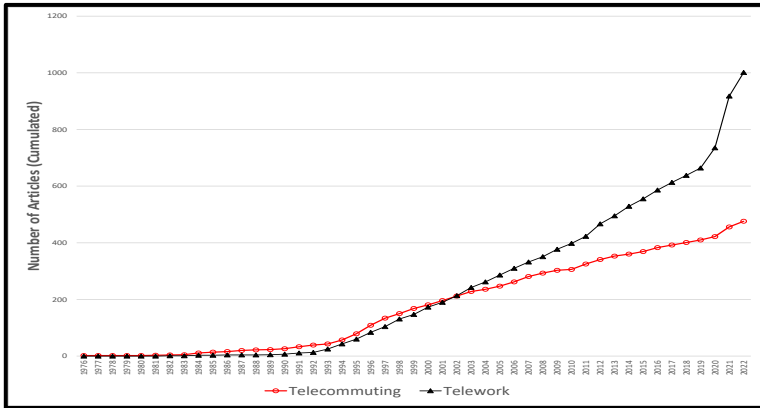
Telework, along with other similar terms such as telecommuting, remote work, home-based work and electronic work, relates to practices associated with the spatial reorganisation of employment, which have evolved rapidly since the beginning of the convergence of telecommunications and computing (Olson, 1983; Wellman et al., 1996; Baruch & Nicholson, 1997; Huws et al., 2000; Sullivan, 2003; Garrett & Danziger, 2007; Allen et al., 2015; Ollo et al., 2021). Jack Milgrom Nilles is credited as the first scholar who explicitly proposed teleworking in 1982 in a *Technology Review* article. He believed that using computers to work from home could one day make long-distance commutes obsolete (Nilles, 1985). As regularly happens in technology, much of these ideas stemmed from conjunctural conditions. Nilles' ideas emerged from the very high levels of air pollution (smog) that Los Angeles had in the 1970s. But, as high smog levels ceased, telecommuting (a synonym for telework) lost academic relevance. However, the topic remained marginal until it regained interest due to the coronavirus contingency in early 2020. Fig. 1 illustrates the evolution of telework and telecommuting research articles published since 1976.

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<sup>2</sup> See the BBC note "Elon Musk declares end to remote working at Tesla," published on 2 June 2022. The information is available at <https://www.bbc.com/news/business-61666339> (date accessed: 31.08.2022).

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*Fig 1. Cumulated papers published under the title "telecommuting" and "telework" from 1976 onwards*



*Source: Author's elaboration based on Scopus database*

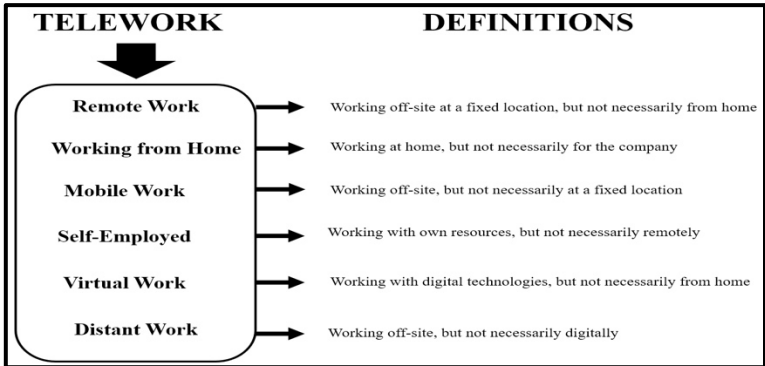
As Fig 1 shows, interest in the topic started to rise in 1993, with teleworking moving faster than telecommuting since 2001. Yet, academic studies exploded in 2020 as a result of the pandemic.

In this regard, a fundamental question is worth posing: what is telework? As seen above, the number of studies dealing with this concept is growing by the day, as is the quantity of terms. By reviewing the literature, one of the early teleworking concepts was identified. It was proposed by Baruch & Nicholson as follows: An employee who performs all or the greater part of their work from a domiciliary base, physically separate from the location of their employer (Baruch & Nicholson, 1997:16). They also pointed out that the self-employed who work from home should not be considered teleworkers. For this study, the above ideas encompass an equivalent concept that serves to understand the different interpretations of telework. The following figure clarifies these equivalences.

The literature agrees that telework primarily involves those knowledge-based occupations where work tasks can be processed and transmitted electronically (i.e., telematics) to employers or clients from remote workspaces, such as the home, alternate office or any space that serves as a temporary office (Garrett & Danziger, 2007; Cappelli, 2021; Choudhury, 2021). However, contrary to Baruch & Nicholson (1997), the concept of telework, particularly in relation to the nature of the workspace (e.g., the home), has been re-evaluated in the light of the changes brought about by COVID-19 (ILO, 2020; Lund et al., 2021; Rothwell & Cabtree, 2021); with home-based telework receiving a lot of attention from the academic,

governmental and corporate world (OECD, 2020; The Economist, 2021; Gaduena et al., 2022; Martin et al., 2022; Tahlyan et al., 2022).

*Fig 2. Conceptually equivalent definitions of teleworking*



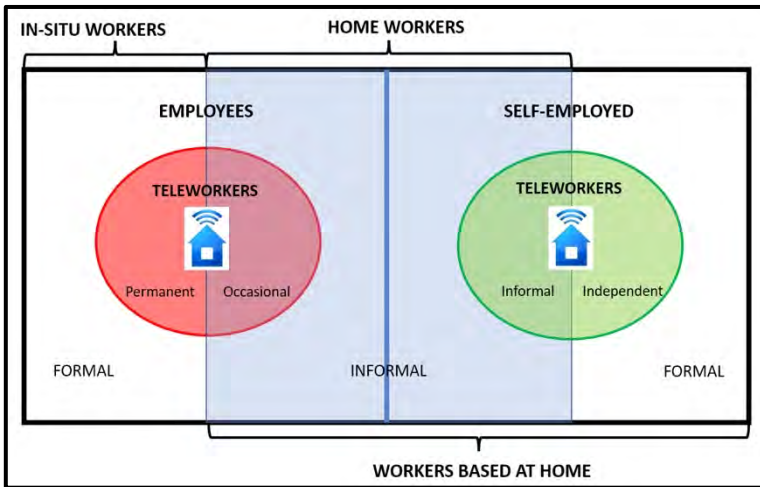
*Source: Author's elaboration based on the literature review*

Despite the mounting interest in home-based work, many researchers are still coping with identifying, selecting and positioning which model can satisfy the various criteria for telework applicability. Commonly standards such as competencies/skills or dedication and qualification requirements have been used to arrive at a definition of telework that can be generally accepted. Still, Bailey & Kurland (2002) recognise that the task is not easy because the very activity of teleworking (considered home-based employment) clashes with a strand of labour market analysis that has traditionally regarded it as work performed by freelance staff carried out on a commission or contract basis, but not necessarily supported by ICTs (ILO, 2020). For this reason, and to exclude those who only make incidental use of a computer or use the home as a base, this chapter, following Sullivan (2003), applies the definition of telework as remote work involving the use of information and communication technologies. Fig 3 depicts the concepts.

Defining telework as a modality that only uses ICTs at home is too restrictive. Future conceptualisations should adopt a more comprehensive meaning of remote contact between workers and employers, especially considering continuing developments in robotics and artificial intelligence (OECD, 2021). Moreover, the experience from previous ages illustrates how sudden innovations can overturn established concepts. For example, former working methods that relied on handling paper-based documents, which were initially transported by the postal service, had to switch to electronic formats when the fax was introduced, thus improving

productivity by speeding the connection up with remote locations (Nilles, 1985).

*Fig 3. Clarification of the concept of teleworking*



*Source: Authors' elaboration, based on ILO, 2020:21.*

All in all, we judge that teleworking has been neatly stated by Olson (1983) through six components: (i) A high degree of intellectual work; (ii). Job done in clearly defined areas of individual tasks; (iii) A moderate degree of initiative, pursuing employer-given objectives under conditions of minimal supervision; (iv) Measurable output of deliverables; (v) Measurable performance; and (vi) No need to operate very bulky items of equipment.

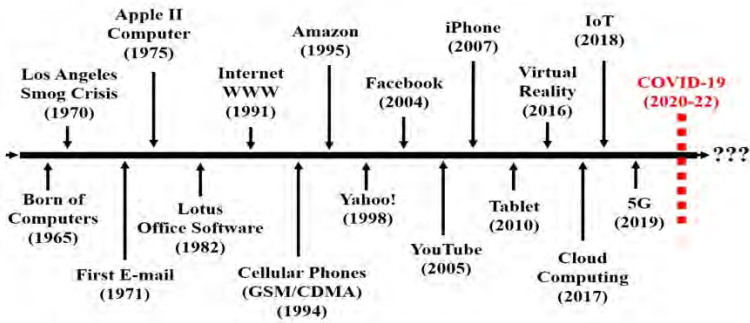
### 3. The Determinants of Telework

COVID-19 substantially disrupted productive tasks worldwide, pushing millions of people into unemployment. Several studies have reported coronavirus' harmful effects on employment—especially in the U.S—finding that the lockdown had a stronger impact on low-quality jobs (OECD, 2021). In particular, Rothwell & Cabtree (2021) report that 40 percent of U.S. workers experienced a worsening in job quality since the pandemic's onset. They found that pre-pandemic job quality strongly predicted changes in job quality during the pandemic, with the bigger COVID-19-related losses among Hispanic and black workers and those with lower educational attainment and income levels. They also suggest that teleworking widened the gap in job quality, with 45 percent of skilled

personnel reporting quality improvements (Rothwell & Cabtree, 2021: 20).

These findings confirm that the pandemic accelerated the long-lasting effects of technological change on industrial relations, swiftly triggering drastic readjustments in work processes. To understand how technological innovations have also affected telework, we shall review the evolution of various industrial and technical events. Fig 4 presents the timeline of main innovations in telecommunications and computing since the first mention of telework in the 1970s.

*Fig 4. Timeline of technological developments in support of teleworking*



*Source: Author's elaboration based on the literature review*

As Fig 4 shows, remote analytical activities, which define teleworking, started with the birth of the computer. This specialised piece of electronic equipment facilitated the digitisation of several office tasks. Later, the advent of the Internet and the deployment of portable devices such as mobile phones converted remote working into a cost-effective option (Choudhury, 2021). Finally, technological innovations in mobile equipment contributed to further developments in teleworking. The so-called smartphones, which are devices capable of transmitting and receiving increasing amounts of information at faster speeds with increased versatility and operability, have encouraged teleworking. No wonder many sectors have thrived after the iPhone's appearance.

Other events in the timeline have also played a role in spurring telework. For example, Mokhtarian (1998) argues that Los Angeles' 1970s environmental crisis forced firms to allow employees to work from home. This effect, called telecommuting, illustrates how unexpected incidents, like COVID-19, can trigger new labour practices.

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On the other hand, many studies have focused on the role of forces apart from technology in encouraging telework. A recurrent topic relates to psychological reasons that induce switching to telework when workers suffer from job stress or lengthy journeys, for instance (Huws et al., 2000; Ollo et al., 2021). However, Bailey & Kurland (2002) argue that available empirical evidence does not support telework's substitution effect, as was widely believed in the 1970s. In particular, they dismiss traveling reductions as an essential incentive for telework.

Another recurring topic relates to the organisational milieu. Several scholars argue that telework may harm hierarchical and interpersonal relationships because ICTs, together with telephone calls, electronic chats and video conferencing, serve as acceptable but imperfect substitutes for face-to-face contact (Allen et al., 2015; Cappelli, 2021). Concern among these researchers arises as to whether these electronic tools will effectively communicate reactions and emotions without face-to-face interaction, which have proven to be very useful in stimulating creativity within today's organisations (Ollo et al., 2021; Tahlyan et al., 2022).

Inter-organisational and interpersonal communications have also been analysed in the context of teleworking. For example, Harrington & Emmanuel (2021) suggest that the expanding use of ICTs would substantially modify interpersonal relations between co-workers shortly. They think, however, that if ICTs are used creatively, teleworkers may not necessarily be left out of face-to-face office networks, thus avoiding the decline of the corporate culture. In short, telework can thus be seen as a cultural change that asks managers and workers to create formal and informal means of adjusting to telework's different needs (Cappelli, 2021). Some pros and cons of teleworking have been stressed by Yap (1996), who has developed an organisational list for telework, as the following table presents.

*Table 1 Pros and cons of teleworking from the employers' perspective*

Advantages	Disadvantages
Attracting and retaining highly qualified professionals	Loss of corporate contact
Ease of hiring employees	Differentiated rules for teleworkers and on-site workers
Lower turnover rate	Need for more remote monitoring
Lower absenteeism	Collapse of labour morale
Reducing overall office costs	Extra installation and communication costs
Less pressure for wage increases	Maintenance and upgrade costs
Potential productivity increase	Difficulty in turning orders
Company's image enhancement	Loss of work interrelationship
Increased opportunities for the elderly and handicapped	Problems with securing crucial firm information

*Source: Authors' elaboration based on Yap, 1996:388.*

According to Table 1, employers appreciate the advantages of teleworking in terms of reduced overall operating costs. However, they are also aware of the loss of corporate identity due to the absence of face-to-face contact. Interestingly, the savings from office rents, overheads, and travel allowances are also welcomed. However, Yap's analysis suggests that productivity gains account for more than half of the total benefits. Moreover, Yap points out that, even with a minimum productivity gain of just five percent, telework can still be a viable option, particularly for managers and professionals, provided that they work remotely for two or three days per week (Yap, 1996:395). In any case, analysing the telework phenomenon is not simple because it involves many dimensions and conditions. Hence, the topic is still a hot debate in academia (Morales & Daboin, 2021; Martin et al., 2022; Tahlyan et al., 2022).

#### 4. Teleworking Evolution During the COVID-19 Pandemic

As discussed above, strict anti-COVID-19 measures encouraged the adoption of ICT-based work arrangements, such as teleworking. Since technological advances are far from slowing down, it will be challenging to predict the rate of telework adoption shortly, although some studies estimate it at 5 percent of the workforce (The Economist, 2021). However, given the pandemic's experience, it is likely that many companies will seek to refine their collaboration and communication mechanisms, as noted by Cappelli (2021) and Chaudhury (2021). Consequently, it seems appropriate to check how telework's supporting tools have evolved during these two years by looking at the market performance of Zoom's shares in the aftermath of COVID-19<sup>3</sup>. Fig 5 compares Zoom's shares' trajectory with those of the Dow Jones Industrial Average (DJIA) from 22 January 2020 to 13 May 2022.

From Fig 5, two stages in Zoom's market shares are distinguishable. An ascending trend, starting in January 2020 up to mid-October 2020, and a downward trend from November 2020 onwards. Significantly, Zoom's declining trend strongly contrasts with the Dow Jones, which began recovering in March 2020. We argue that the initial boost in Zoom's price was due to the high numbers of virtual conferences held on that platform at the pandemic's peak, as the graphic shows.

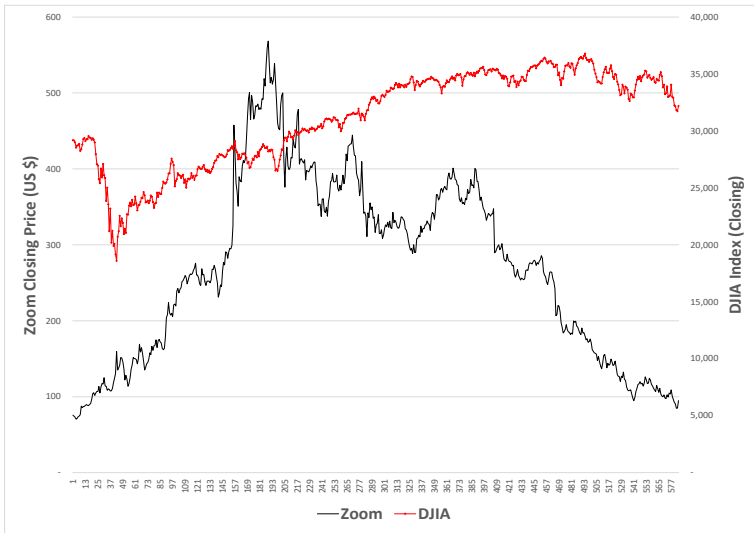
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<sup>3</sup> Zoom is the leading company behind the enterprises' remote communications platform (<https://zoom.us/>) (date accessed: 31.08.2022).



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*Fig 5 Comparison between Zoom Dow Jones Industrial Average (DJIA).2020-2022*



*Source: Author's elaboration, based on Zoom and DJIA Reports  
<https://bit.ly/3Hh1ORW> and <https://on.wsj.com/3xqmobr>*

Indeed, video conferencing was imperative during the pandemic for supporting productive tasks worldwide. However, teleworking variable adoption rates seem to owe more to organisational reluctance rather than technical issues. A plausible reason is the likely loss of control that adopting organisations would face if employees are allowed to get a greater degree of autonomy thanks to remote activity (Bailey & Kurland, 2002; Schwab & Malleret, 2020).

On the other hand, the abrupt transition from physical to digital interactions has exposed concerns about the psychological effects of the so-called 'Zoom fatigue,' which refers to the feeling of exhaustion associated with using video conferencing. That is, lengthy sessions in Zoom seem to have had a counterproductive effect on the worker's psychological health due to the complexity of the specific spatial dynamics taking place in video conferences, together with the additional cognitive effort to interact with others in this context (Riedl, 2022). Therefore, the combined effect of easing mobility restrictions, the reluctance of firms to embrace remote work, the need for hiring a computer-skilled workforce, the concomitant investments in ICT infrastructure, and the unexpected psychological effects of Zoom fatigue may hint at the possibility that telework was only a transitory experience, as Morales & Daboin (2021) have pointed out. The following section explores this possibility in the case of the United States.

## 5. The Current Situation for Teleworking in the United States

Teleworkers rely on their workplace's infrastructure quality, which helps complement their digital skills. In the case of Europe and the United States, thanks to their high standards of education, almost 40 percent of employees can work from home due to their mastery of ICT tools (OECD, 2020). Hence, computer literacy is crucial elsewhere for successfully performing telework tasks (OECD, 2019; and 2020). To test the degree of dexterity needed, the OECD surveyed workers' ability to solve analytical problems on the job in 2017 (OECD, 2019). ICT mastery was thus measured through the degree of digital talent, divided into three categories: 1) basic skills, 2) intermediate skills, and 3) advanced skills. Basic skills corresponded to copying or moving a file or folder, using copy and paste tools to duplicate or move information within a document, sending emails with attachments and transferring files between a computer and other devices. The common skills value corresponded to the computer-based activities for using the basic arithmetic formula in a spreadsheet; connecting and installing new devices; producing electronic slides with ad-hoc software; and finding, downloading, installing and configuring software. Advanced skills stemmed from writing a computer program using a specialised programming language. The OECD reports that the average worker in the United States, New Zealand and Australia engages in problem-solving at work more frequently than in any other country. However, the variation across countries is relatively negligible (OECD, 2019:102). Yet, not all jobs can be performed remotely simply because many chores are not susceptible to digitisation, such as those related to manual requirements such as food preparation and delivery (Dingel & Neiman, 2020; Garrote et al., 2021).

To test whether telework was only a transitory event, we draw on the Current Population Survey (CPS), which started reporting the percentage of employees working remotely in the United States from May 2020 onwards due to the COVID-19 pandemic. The CPS results are available at the CPS URL: <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.html>. We analyse telework patterns by type of activity in the U.S. to check for the modality. In May 2020, forty percent of Americans preferred to work from home full-time, compared with 35% who sought a home-office hybrid and 25% who wanted to go back to the office full-time; as time went by, there emerged a sharp decrease in teleworkers starting in the fourth quarter of 2020 (Dey et al., 2021).

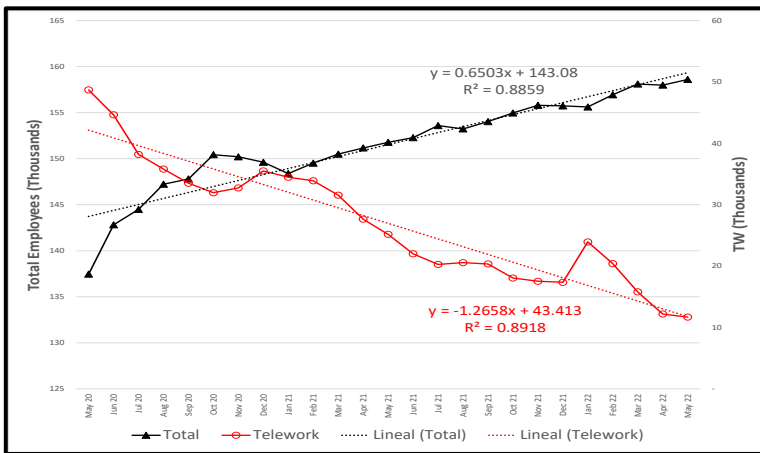
Telework's main generators are administrative, managerial and professional occupations, which have retained many of its essential features despite the remoteness. It is worth noting that we are facing turbulent times, which were first caused by the pandemic, but are now being

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exacerbated by the current economic global upheaval, further affecting work routines and social practices. For example, before the pandemic, offices used to be characterised by qualitative improvements in technology tools, which implied the need for employees with competent computer skills. Still, current global threats and rising costs are pushing ICT standards up. Yet, teleworking seems to be waning because statistics from the Supplementary Data to Measure the Effects of the Coronavirus Pandemic (COVID-19) on the labour Market section of the CPS survey indicate that the number of U.S. teleworkers has been shrinking since May 2020, when the CPS began collecting these data<sup>4</sup>.

From May to October 2020, total U.S. employment presented a strong recovery amid the pandemic, to stabilise after that. But the growth trend between May 2020 and May 2022 shows an increase of almost twenty-two thousand new jobs per month (as shown in Fig 6), with telework falling at a rate of forty-one thousand jobs per month. The contrasting trends are confirmed when we assess the correlation coefficient between total employment and telework from May 2020 to May 2022. The resulting figure is totally inverse and highly significant (-0.952).

*Fig 6 Total work and remote work trends in the United States. May 2020-May 2022*



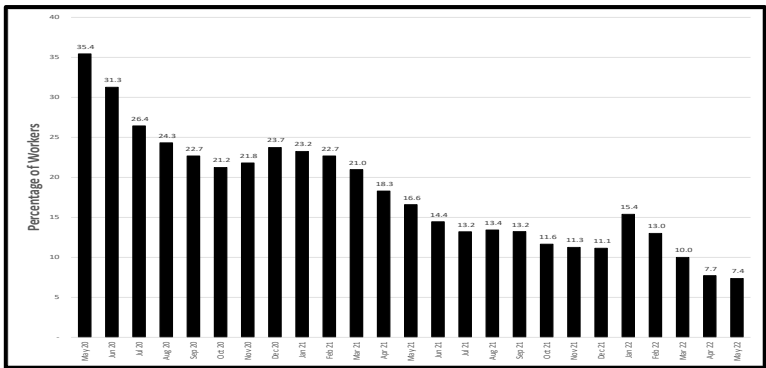
*Notes: The equations present the parameters of the linear trend plots from May 2020 to May 2022 for both variables.*

*Source: Author's elaboration based on U.S. Labor Force Statistics from the Current Population Survey*

<sup>4</sup> Data available at <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm> (date accessed: 31.08.2022).

As Fig 6 shows, telework in the U.S. is diminishing at a rhythm of 1,265 workers per month, whereas national employment is growing by 65,000 jobs per month. A more specific analysis is presented in Fig 7, which shows the percentage of teleworkers in total U.S. employment. The data confirm that teleworking spiked in the pandemic's early stages, reaching almost forty percent of total jobs, as Brynjolffson et al. (2020) had previously reported. Still, as soon as the lockdown restrictions eased, the teleworking rate began to recede. Currently, teleworking adoption is around seven percent, which used to be the past benchmark, and might also become the future long-term equilibrium value.

*Fig 7 Percentage of teleworkers as total workforce in the United States. May 2020- May 2022*



*Source: Author's elaboration based on U.S. Labor Force Statistics from the Current Population Survey*

One should remember that remote labour is quite suitable for workers related to (mostly) cognitive tasks and duties. In addition, ICT infrastructure is a must to perform telework. However, the pandemic forced the rapid adoption of remote labour for those workers in the condition of rapidly adopting it. Unfortunately, not all workers were able to switch to the newer option. Although some workers with no ICT skills were handicapped, they tried hard to accomplish it; but those devoted to performing physical tasks or required to stay in the brick-and-mortar premises had no option but to carry out their duties on the spot. That was the case for truck drivers, nurses and doctors, firefighters and policemen, cooks and janitors, and many others who had to stay at the front of the health contingency to help and assist the rest of the population. Obviously, these people were never in the condition to become teleworkers. Nonetheless, since teleworking skills are closely related to how workers advise, influence or teach their co-workers, it will be an urgent task for the U.S. private sector to implement appropriate measures to increase new

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work modalities, such as hybrid jobs to face a possible skill shortage that would prevent in the future the execution of on-site work activities.

For this study, while the percentage of teleworkers has been decreasing systematically since May 2020, we shall analyse which activities are still prone to telework. To this aim, table 2 reports the changes in 33 occupations identified by the survey. Our analysis from the supplementary data module aimed at measuring the effects of the coronavirus pandemic on specific jobs is presented next.

*Table 2 Variation of teleworking occupations in the United States.  
May 2020-May 2022*

Occupation	May 2020	May 2022	Average	Reduction (%)
Education, training and library occupations	80.9	8.4	30.2	72.5
Social and community services	70.2	17.2	36.3	53.0
Legal occupations	74.0	27.3	46.7	46.7
Life, physical and social science occupations	68.0	23.5	41.5	44.5
Finance and insurance	66.8	27.0	45.1	39.8
Arts, design, entertainment, sports and communication	55.5	16.7	33.6	38.8
Commercial and financial operations	67.1	28.3	45.9	38.8
Computer science and mathematics	75.9	37.4	56.3	38.5
Professional and technical services	64.1	25.9	43.6	38.2
Architecture and engineering	58.8	22.7	38.7	36.1
Real estate and leasing activities	41.9	7.1	20.9	34.8
Arts, entertainment and recreation	37.9	7.2	16.5	30.7
Social work	37.8	11.8	20.5	26.0
Other services, except private households	29.8	6.3	13.6	23.5
Public administration	36.6	13.9	24.5	22.7
Wholesale trade	31.4	8.8	17.0	22.6
Health professionals and technicians	23.7	5.4	11.5	18.3
Health services, except hospitals	24.8	6.8	13.1	18.0
Management, administrative and waste services	23.7	7.3	11.9	16.4
Hospitals	21.2	7.7	12.3	13.5
Protective services	15.6	3.2	6.5	12.4
Retail trade	16.7	4.3	8.0	12.4
Personal care and services	15.5	3.2	5.7	12.3
Installation, maintenance and repair	10.7	0.9	3.8	9.8
Transportation and warehousing	11.8	3.9	6.6	7.9
Accommodation and food services	8.0	1.8	3.8	6.2
Construction and extraction	6.4	1.0	2.3	5.4
Sanitary support	6.3	1.6	3.6	4.7
Transportation and material moving	5.0	1.0	2.0	4.0
Food preparation and service	4.5	0.9	1.9	3.6
Building and grounds cleaning and maintenance	4.0	0.9	1.9	3.1
Agriculture, fishing and forestry	2.5	1.0	1.6	1.5
Total	35.4	10.0	18.9	25.4

*Source: Author's elaboration based on U.S. Labor Force Statistics from the Current Population Survey*

From Table 2, we observe that computer science and mathematics jobs are highly suitable for telework, accounting for an average of over fifty percent of total employment. In contrast, agriculture, forestry and fishing, which

rely on manual labour, are not conducive to remote work. We conclude that knowledge-based activities (i.e., cognitive jobs) are the most likely to be performed remotely (or at home), in contrast to manual actions, thanks to ICT technical support. Obviously, part of the telework growth lies in the quality of the qualifications required for intellectual jobs, which also explains why they were not strongly affected by restrictions on physical mobility.

We can extract several implications from the empirical results. First, it is unclear whether the adoption of telework helped reduce COVID-19's impact on the U.S. economy because it was almost immediately abandoned as lockdown eased. Even though telecommuting helped abate expenditures on office space and probably improved employee well-being, it is still uncertain whether the shift toward teleworking is as well established as to lead to sustained productivity growth. The assessment is further complicated by growing fears about the post-pandemic evolution, as shown by current inflationary trends.

Other implications are also worth considering, such as the transition to more complex working modalities like hybrid combinations (part of the time at home and part at the office) or the increased flexibility and options to attract talent by hiring remotely. Even internationally, it is expected that the formalisation of hybrid work arrangements would result in people moving from densely populated cities to more distant spaces. However, a deeper analysis would be needed.

## 6. Conclusions

This chapter discussed remote work, also known as teleworking. The modality allows workers in physical sites to switch to remote work without compromising efficiency or productivity. Before the COVID-19 pandemic, telework was viewed as a reasonable (and even desirable) form of employment. After the pandemic, telework's endurance is still uncertain, although available data allow us to discuss its potential economic benefits.

So, this paper analysed the results published by the U.S. Bureau of Labor Statistics (BLS). The objective was to identify which jobs have been performed from home (and which have not) in the United States since the onset of the COVID-19 pandemic. The empirical analysis indicates that, before the pandemic, telework was confined to a relatively small percentage, primarily managers and administrative staff who were also more computer literate. With the onset of confinement, working conditions changed dramatically, forcing many workers to adopt the

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telework option. Those unable to do so either lost their jobs or were forced to take temporary unemployment leave.

Our analysis suggests that occupations associated with clerical work adapted quickly to the restrictions imposed by the pandemic. However, telework adoption, far from continuing to grow, began to decline as the pandemic restrictions eased (at least in the United States). As a result, we are currently observing a transformation in the labour market. Still, further analysis is required to confirm whether the remote work phenomenon is replicated in other latitudes under the same conditions or whether telework was only a transitory solution because it lacked the strength to become permanent. In any event, it seems imminent that there is already a trend towards a so-called hybrid work modality. If this trend consolidates, it should be increasingly registered in the employment statistics in the coming months.

Concerning teleworking benefits, it is worth highlighting those that affect the environment. On this point, Jack Nilles (1985) proposed, in the late 1970s, the use of computers to work from home, arguing that teleworking would make commuting unnecessary. Although the idea was quite sensible, the conditions for this did not exist at the time, as the Internet did not emerge until 1994. But today, the impact of telework on the environment can be enormous. On the downside, some workers suffer from lengthy videoconferences, which have produced the so-called Zoom fatigue. The unexpected detrimental psychological effects of teleworking will undoubtedly call for further examinations and explanations.

Our analysis also suggests that remote employment is most advantageous for knowledge-based workers, as the highest-paid workers tend to be those who can perform value-added chores. On the downside are low-skilled staff who rely on physical work and thus rarely can perform virtual tasks. They are the so-called "essential workers." While it is premature to predict an outcome for this situation, a likely new social division could nonetheless emerge.

Finally, an analysis of the productivity gains is also needed because the highest performing firms would likely be more willing to adopt telework if higher productivity is coming out. Therefore, we think that our framework analysis might be applied to deepen the study of remote work, considering that we have contributed to understanding this complex and exciting phenomenon.

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# 3

## THE INCREASING IMPORTANCE OF GENDER-RESPONSIVE PLANNING AND BUDGETING IN THE TIME OF COVID-19<sup>1</sup>

Gamze Çimen<sup>2</sup>

Coşkun Karaca<sup>3</sup>

### *Abstract*

*The budget, which is the basic expression of political priorities, is an important policy tool of governments. Budgets reflect the values and priorities of countries. Due to the different characteristics of women and men, girls and boys in society, the effect of the budget on individuals may differ. Public policies that cannot adequately meet the different needs and priorities of individuals with budgets prepared impartially further aggravate gender inequalities. At this point, gender-responsive budgeting provides an opportunity to make existing gender differences visible and equal opportunities in resource allocation. In this context, the main purpose of gender-responsive planning and budgeting is to further strengthen the equality of opportunity between women and men by considering the systematic and sustainable integration of the gender perspective at all stages of policy-making processes. The international community, which has accepted that gender equality is a must for sustainable development for the last 40 years, has called on all countries to allocate resources in a way that will ensure gender equality in their budgets. The fact that more than 80 countries responded to this call by preparing gender-based budgets at the national and local levels has been a promising development for ensuring gender equality. Although policymakers have made more room in their budgets for gender equality policies in the past 10 years, the recent COVID-19 outbreak has resulted in increased gender inequality. In this study, which deals with the effects of the COVID-19 epidemic on gender inequality, the gender-responsive policies implemented in some selected countries and Turkey were discussed and the importance of gender-responsive budgeting was mentioned.*

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## 1. Introduction

**B**udgets containing the future financial plans of governments are documents prepared by the executive at regular intervals in line with the objectives of macroeconomic stability, redistribution of income, and allocation of financial resources to various government functions and submitted to the legislature for approval (Wehner & Byanyima, 2004, p. 11). Thanks to the budget, the needs of the voters are met effectively, and the fair collection of public revenues and the optimal calculation of expenditures become possible. Gender-responsive budgeting, on the other hand, means bringing an egalitarian perspective to all stages of the budget process to strengthen the equality of women and men or to reduce inequalities. With a gender-responsive budget approach, women are made visible economically and financially (Özkanca Andıç & Erasa, 2017, p. 150).

The gender-responsive budgeting approach is based on the concept of gender. While the concept of gender is used to express the basic biological differences between men and women, the concept of gender refers to the socio-cultural characteristics that determine the role of men and women in society, which change depending on religion, education and social values (Wehner & Byanyima, 2004, p. 55). In this context, can be said that gender is a biological concept and gender can be explained by considering a cultural context (Oakley, 2015). Since gender identities are imposed on people by the societies they live in, the changing role of men and women in society reveals different needs and concerns. In this respect, budgets prepared without taking into account the different roles, abilities and needs of women, and men cause inequalities to become stronger (Wehner & Byanyima, 2004, p. 55).

A gender-responsive budget can also be considered a financial innovation in terms of translating gender commitments into financial commitments (Chakraborty, 2014, p. 2). It's important to include policies for gender equality in the budgeting process and to allocate sufficient appropriations from the budget in terms of supporting gender responsive aims to increase gender awareness in the policies, and budgets of institutions (Budlender, 2005, p. 11).

However, the economic and social bottlenecks experienced by countries may exacerbate gender inequality. Epidemics, and especially pandemics, are a good example of situations that deepen inequality between men and women (Koç & Yeniçeri, 2021, p. 80). Empirical evidence from global infectious epidemics in the past has pointed to heightened gender inequities in maternal and reproductive health (Viswanath and Mullins, 2021, p. 230). For instance, gendered norms in West Africa during the Ebola epidemic and the Zika epidemic implied that women were less likely to be involved in decision making, had less control over their reproductive health and their needs were largely unmet (Davies & Bennett, 2016; Sochas, Channon, & Nam, 2017; Viswanath and Mullins, 2021, Wenham et al., 2019). Similar situations also emerged during the COVID-19 epidemic, and the socioeconomic problems caused by the epidemic slowed the progress towards gender equality globally. Research conducted around the world during the epidemic has shown that women and girls face many problems such as poverty, economic insecurity, and gender-based violence. In addition, women and girls disproportionately bear the burden of unpaid care and domestic services due to the global contraction in the care sector (FP, 2021, p. 1).

As a matter of fact, the main purpose of the study is to reveal the negativities faced by women and girls most affected by the epidemic during periods such as the pandemic and to contribute to the establishment of gender-sensitive budgeting in government policies. Although there have been many studies on the understanding of gender-sensitive budgeting in the literature for the last 20 years, there are very few studies on the importance of gender-sensitive budgeting in epidemic and crisis periods. In this context, the effects of the COVID-19 epidemic on gender inequality were discussed in the study, and the necessity of gender-responsive budgeting in such extraordinary times was discussed.

## **2. Effects of the COVID-19 Pandemic on Gender Inequality**

Epidemics; in addition to causing sudden and widespread diseases and deaths, also cause many social, political, and economic problems in societies (Çakar Turhan, 2020, p. 1). As a matter of fact, the COVID-19 pandemic has led to an increase in gender inequality, which existed before but tends to improve, resulting in increased exposure of women and girls to violence (Bourgault, Peterman & O'Donnell, 2021, p. 3), increased working hours and workload, and deteriorated working conditions (Karakaş, Bayar, & İlkaracan, 2020, p. 1).

From a macro perspective, the COVID-19 outbreak; caused mass unemployment, shrinkage in gross domestic product, poverty, liquidity,

and debt crisis, and caused a global economic recession. Epidemic data for 2020 show that there are approximately 114 million full-time job losses globally (UN Women, 2020, p. 6; ILO, 2021). Women and girls; as people who are more represented in sectors such as housework, care, food, service, and retail, have been more affected by the epidemic. In addition, quarantine measures, including the closure of schools and daycare centers, have led to an increase in unpaid care and housework, and domestic violence has increased (Khan & Gifford, 2021, p. 2).

During the COVID-19 era, women have experienced greater economic insecurity globally due to gender roles that see housework and care work as "women's work". The increased domestic responsibilities of COVID-19, including housework and taking care of younger siblings, have also made adolescent girls one of the most affected by the epidemic. Estimated that as many as 20 million girls of secondary school age will be permanently out of school due to the pandemic in low- and middle-income countries (FP, 2021, p. 9).

The results of the studies in the literature also strengthen this judgment and report that COVID-19 causes serious adverse effects, especially on women and girls. For example, in the study by Adams-Prassl et al., (2020) investigating the effects of COVID-19 on the labor markets in England, the USA and Germany, the people who lost their jobs in the epidemic were more women and women experienced a greater reduction in their salaries than men during the analysis period is seen. The results of the study by Galasso & Foucault (2020) for 12 different countries also point to similar findings and show that the rate of job loss in women during the COVID-19 period is higher than in men. Similar study results demonstrating the negative economic effects of the epidemic on gender inequality also show that women experience more job losses and work uncompensated overtime than men (See Alon et al., 2020; Graeber, Kritikos & Seebauer, 2021; Adams-Prassl et al., 2020).

In one of the recent studies, Flor et al. (2022), on the other hand, the data of 193 countries on gender inequalities for March 2020-September 2021 were examined and four main findings causing gender inequality were found. Accordingly, during the epidemic period;

- I. Female turnover (26%) is higher than males (20.4%).
- II. The dropout rate of women and girls for reasons other than school closures is 1.21 times higher than that of men.
- III. Women are 2.4 times more likely than men to quit their jobs to look after others.

- IV. Finally, women and girls are 1.23 times more likely to report gender-based violence than men during the epidemic.

Another negative impact of COVID-19 on gender inequality is domestic violence, mostly perpetrated against women and girls. As a matter of fact, there are many studies showing that domestic violence, which is seen as the reason for gender-sensitive budgeting, increased during the COVID-19 period (See. United Nations, 2020; Piquero et al., 2021; Bourgault, Peterman & O'Donnell, 2021). For example, Piquero et al. (2021), in which 18 different empirical studies were examined, the effect of restrictions such as curfew and quarantine measures during the COVID-19 period on domestic violence cases was estimated, and the results of the study showed that restricting people to a certain place increased violence and abuse against women.

When we look at the findings of studies examining the effects of COVID-19 on gender inequality, seen that the epidemic exacerbates pre-existing social and economic inequalities rather than creating new inequalities (Flor et al., 2022, p. 2382). In addition, quarantine and confinement measures have increased the care burden in households, causing the increased burden to remain on women to a large extent. The work balance, which is already fragile against women in the employment market, has become more difficult with the epidemic, and the increase in workload in services such as health, patient and elderly care, where women are more employed, has led to worsening women's working conditions (Karakaş, Bayar & İlkaracan, 2020, p. 1).

### **3. Exemplary of Gender Responsive Budgeting in the World**

In recent years, international organizations; have recognized that gender equality is essential for sustainable economic growth and has called on countries to use their budgets in a way that is based on gender equality and promotes resource allocation. Responding to this call, more than 60 countries have started gender-based budgeting activities at the local and national levels. (Rubin & Bartle, 2005, p. 259). These activities continued during the COVID-19 epidemic and 64% of the 1299 precautionary packages aimed at ensuring gender equality focused on preventing violence against women and girls (Khan & Gifford, 2021, p. 2). The policy decisions taken by governments on gender-sensitive budgeting are described below. In order to narrow the subject, more frequently encountered examples in the literature are given instead of all country examples.

In this context, the country that took the first step in gender-sensitive planning and budgeting activities is Australia. The "Budget Program for



Women”, adopted by the Federal Government in 1984, is considered the first example of gender-responsive budgeting in the world (Sharp ve Broomhill, 2002, p.26). The government, which has published the "Women's Budget Table" since 2008, has laid the groundwork for a more effective discussion of gender equality in public policies (Sgueo, 2015, p. 3).

Gender-responsive budgeting approach in France first started in 2000 when French parliamentarians put pressure on the government regarding women's rights and gender equality. Thanks to this call, the yellow supplement of the budget on women's rights and equality, "Jaune Budgetaire" no. 137 has emerged. This document, which demonstrates the budget's contribution to the promotion of gender equality and women's rights, serves as a monitoring and information gathering function for the legislature. Thus, in their budgets, each ministry has to show the effects of its expenditures on women and its activities promoting gender equality (Elson, 2003, p. 17; COE, 2005, p. 29). Gender equality was further developed in the country in 2012 and beyond, and with the publication of two ministerial circulars on the subject in August 2013, mainstreaming gender became a part of the public policy process. As a matter of fact, as of 2013, with the circular, at least 20% of all genders, regardless of male or female, should be appointed to senior management positions in the civil service, at least 30% in 2015 and at least 40% in 2018 has been brought (Lépinard ve Lieber, 2015, p. 9).

The gender-responsive budgeting process of Germany started with the transfer made in this regard to the personnel expenditure item in the 1980s. Such expenditures were included in the transfer expenditures in the 1990s, and in the other transfers item since 2003 (Färber, 2018, p. 176). In its post-2005 study, the Federal Government declared that smaller local units and other administrations should also assume greater responsibility in designing gender-responsive budget policies (Downes, Trapp & Nicol, 2017, p. 10). Many of the federal ministries in the country have done important work on gender-responsive budgeting. While the Ministry of Youth ensures gender control on critical budgetary issues, includes analysis in the participation of girls and boys in activities in the annual reports to be submitted to the ministry by other institutions. Other federal ministries, such as the Department of Education and the State Department, and federal political education bureaus have created similar tools to control and restructure gender-based spending. Gender-responsive budgeting strategies have been added to many local government budgets at the local level. For example, while the local government in Berlin prepared the budgets of all 12 districts in this way, the Lichtenberg district administration conducted

a gender-utilization analysis in 19 budget types and made the analysis a part of the budget process (COE, 2005, p. 30).

Morocco's gender-responsive budgeting initiatives began in 2002 when the Ministry of Finance and Privatization conducted preliminary research on "the methodological feasibility of budget accounts for gender and children in Morocco". Gender reports containing key priorities and targets for ministries were published in 2006, enabling some ministries to report sectoral and gender-disaggregated data. In addition, the needs of women and girls in education, health, the judicial system, infrastructure, and employment were addressed, and financial policies were started to be developed to ensure equal access to education, and health services while increasing women's equality of opportunity in the labor market. In the last 15 years, Morocco has passed several laws to strengthen gender equality, prohibiting discrimination in employment, introducing maternity leave, and increasing penalties for sexual harassment. Budget law and other laws stipulate that gender equality should be taken into account and make gender reporting mandatory. Within the scope of the gender report in the country, 22% of the development goals and 19% of the indicators are prepared for gender (Kolovich & Shibuya, 2016, pp. 12-14).

In Finland, the first gender-oriented analysis started in 2000, and then a gender equality guide was prepared. In 2007, projects with gender-responsive budgeting were developed, and as of 2009, each ministry started to make gender-responsive regulations (Koç, 2009, p. 9). While one-third of the ministries create concrete targets and actions regarding gender equality, the Ministry of Social Affairs and Health presents the statistics they have compiled by disaggregating them by gender. Finland added gender equality, economic growth and sustainability targets to its 2012-2015 Gender Equality Action Plan in order to ensure that the country's economic policies gain a gender perspective (Quinn, 2016, p. 20).

Policies reinforcing gender equality by countries continued uninterrupted during the COVID-19 period. Nearly 400 social policy, and labor market measures were adopted in 214 countries of the world, targeting the economic security of women or alleviating the problems of unpaid care. In 132 countries, 70 different financial and economic bailout packages were adopted in the sectors dominated by women to strengthen their economic security (United Nations, 2022). For example, in Argentina, cash transfers, estimated to reach 3.6 million families, were provided to alleviate the difficulties experienced by women. In Kenya, social assistance programs have been prepared by the government so that women can get paid jobs and work in better paid jobs (Kevane, Aishwarya Lakshmi & Dhar, 2021, p. 21; Grantham et al., 2021, p. 19).

Another problem that emerged during the epidemic period is that the social closure and quarantine measures taken by governments increased the childcare burden on women. Seeking to alleviate this burden, some countries, such as Poland, have allowed families of children whose nursery and kindergarten are closed to receive childcare allowance. Similarly, countries such as the Cook Islands, Czechia, Germany, Italy, Malta, and Spain have implemented social assistance programs in the form of childcare allowance and cash transfers for households with children (Grantham et al., 2021, p. 25). It is seen that the support for women during the epidemic period is also applied in Canada. Canada emphasized “more inclusive and sustainable feminist policy commitments that value women's work” in its 2021 budget. Within the scope of these commitments, was stated that in the next five years, 601.3 million dollars will be allocated to the budget to prevent gender-based violence and 30 billion dollars will be allocated for the establishment of a child care system (FP, 2021, p. 20). Among the social policies implemented by countries, there are also practices for disadvantaged groups. For example, Portugal granted temporary citizenship rights to immigrants and asylum seekers whose livelihoods decreased during the epidemic period to enable them to benefit from social security systems (Grantham et al., 2021, p. 25).

When an overall assessment is made, since the start of the COVID-19 pandemic, almost US\$16 trillion has been pumped into the global economy, and governments are now rolling out the second and third phases of support. With the introduction of vaccines, some countries can begin to get the pandemic under control and start investing in recovery. Most countries, however, are still grappling with the pandemic's immediate health and socio-economic fallout, including its outsized impact on women. While the adoption of policy measures to prevent or respond to the surge in violence against women is more widespread, the social protection and jobs response has not adequately supported women's economic security nor addressed care work or financing of care services (Khan & Gifford, 2021, p. 1).

#### **4. Gender Responsive Budget Practices in Turkey**

The establishment of the infrastructure for gender-responsive budgeting in Turkey dates back to the mid-1980s. The institutionalization of gender equality within the state in our country started with the establishment of the Advisory Board for Policies for Women in 1987, and then, with Statutory Decree No. 422, the Presidency on the Status and Problems of Women was established in 1990, and steps were taken to consider gender-responsive plans in the country's policies (Tüğen & Özen, 2008, p. 11).

The gender-responsive budget approach in Turkey does not envisage making a separate budget for women, aimed to bring a gender equality perspective to the current budget priorities and budget process. However, can be said that the gender-responsive budget approach in our country is a subject that has been examined theoretically and has a limited application area (Tepekule, Özcan, & Kayalidere, 2016, p. 2325). Conditional cash transfer, which is one of these applications, is a conditional social assistance program that aims to encourage poor families to provide cash support for the education of their children in the education age, to complete the health checks of their children in the 0-6 age group, and to encourage mothers-to-be to give birth in the hospital by having regular check-ups (Ministry of Family, Labour and Social Service, 2012, p. 7). The European Union accepts the "conditional cash transfer" practice as a successful example in terms of gender responsive budgeting.

The Government of Turkey has become a party to various international agreements on the protection and development of women's rights, empowerment of women, and gender equality in gender-responsive plans, and continues to carry out relevant activities in this context. Accordingly, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) was ratified in 1986, the Beijing Declaration and Platform for Action was adopted in 1995, and the Optional Protocol came into force in 2003. In the same year, the International Covenant on Economic, Social, and Cultural Rights, also known as the twin conventions, and the International Covenant on Civil and Political Rights (ICCPR) was adopted (UNECE, 2019, p. 1). Conditional Cash Transfer applications started with the Social Risk Mitigation Project carried out in 2001 under the leadership of the World Bank and became widespread in Turkey in 2003. Within the scope of these applications, a certain amount of Social Assistance and Solidarity Encouragement Fund payments are made within the scope of health and education services for the poorest segment, which corresponds to 6% of the population. (KEFEK, 2014, p. 24).

Comprehensive reforms in the budgeting process with the Public Financial Management and Control Law No. 5018 adopted in 2003 formed the basis for gender-responsive budget studies, and a gender-responsive budget approach has been included in the budgeting process since 2008. The Gender Equality National Action Plan prepared by the General Directorate on the Status of Women includes studies on gender equality for the period 2008-2013. Although was stated that gender-responsive budget practices would be developed in the 10th Development Plan covering the period of 2014-2018 (Günlük Şenesen vd., 2013, p. 7), no gender-responsive budgeting was included in the 11th Development Plan

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and no expression regarding gender equality was used in the 2020 Budget Rationale (Yakar Önal, 2021, p. 9).

When we look at local governments, seen that municipalities and non-governmental organizations started awareness-raising, and training activities on gender-responsive budgeting in 2006. Training activities and meetings on gender-responsive budgeting have been held by the UN since 2008 under the Ministry of Interior. The provinces of Şanlıurfa, İzmir, Nevşehir, Şanlıurfa, Kars, and Trabzon were included in the United Nations Joint Program Women-Friendly Cities 1 project carried out between 2006 and 2010 under the leadership of the UN Population Fund. Gaziantep, Antalya, Bursa, Adıyaman, Samsun, Malatya and Mardin were selected as pilot provinces in the Women Friendly Cities 2 project carried out jointly by the UN Population Fund and the UN Development Program between 2011 and 2014. In the 2012-2015 period, UN Women; With the partnership of the UN Development Programme, Sabancı Foundation and Sabancı University, the “UN Joint Program for the Protection and Promotion of the Human Rights of Women and Girls” focused on educational activities in pilot province municipalities. Pilot provinces included in the program were determined as Eskişehir, Edirne, Çanakkale, Kocaeli, Aydın, Kastamonu, Ordu, Kayseri, Gaziantep, Kahramanmaraş and Erzincan. (Yakar Önal, 2021, p. 22).

*Table 1: 2006-2021 Fiscal Year Appropriations and Expenditures (Million ₺)*

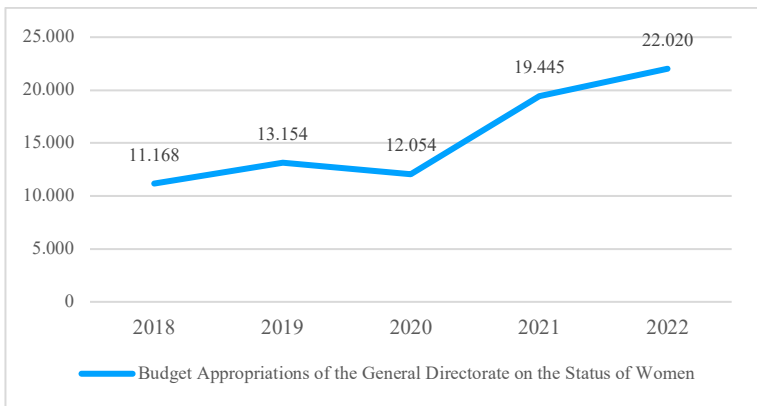
T.C. Ministry of Family and Social Services					General Directorate on the Status of Women		
Year	Initial Allowance	Year End Allowance	Expenditur <sub>e</sub>	Share in Budget	Initial Allowance	Year End Allowance	Expenditur <sub>e</sub>
2006	3.781	3.450	2.743	0	1.607	2.645	2.048
2007	4.229	4.402	3.729	0	2.113	3.446	2.941
2008	4.720	4.920	4.417	0	3.592	3.832	3.582
2009	5.594	5.783	5.030	0	4.240	4.310	3.814
2010	5.929	5.940	5.371	0	4.700	4.716	4.270
2011	7.297	7.797	6.561	0	5.752	5.771	4.875
2012	8.841	11.390	11.348	3.1	6.383	5.190	-
2013	14.732	16.463	16.393	4	11.585	11.163	10.130
2014	17.024	16.222	16.089	3.9	9.661	9.881	8.858
2015	18.249	18.108	18.047	3.9	8.181	7.765	6.871
2016	24.799	22.079	21.838	4.4	9.501	8.630	8.046
2017	24.303	24.679	24.395	3.6	8.648	13.132	11.963
2018	26.690	28.632	28.765	3.5	11.168	9.240	8.772
2019	25.354	22.942	20.004	3.6	13.154	13.216	12.336
2020	25.733	31.063	31.028	3.2	12.054	12.502	11.620
2021	29.430	51.318	51.282	2.6	19.445	16.047	15.186

*Reference: Ministry of Family, Labour and Social Service, 2022; Ministry of Treasury and Finance, 2022.*

Whether the countries implement policies in line with the gender-responsive budget approach can be learned by looking at the share allocated to women and girls from the budget. In this context, Table 1 shows the budget allocated to the Ministry of Family and Social Services and the General Directorate for the Status of Women in Turkey.

When Table 1 is examined, seen that the share allocated from the general budget for women between the years 2006-2011 was quite low. This rate has not even reached the level of 1%. In 2012 and after, the rates of the Ministry of Family and Social Services were 3.58% on average, and started to increase in 2012. Although the amount allocated seems to increase numerically over the years, its ratio in the budget is decreasing. According to the 2021 activity report published by the Ministry of Family and Social Services, the amount spent by the General Directorate on the Status of Women from the Ministry's budget in 2021 corresponds to 30% of the budget with 15.1 billion TL. The budget of the General Directorate on the Status of Women has decreased gradually since 2013 and has increased in recent years. The share allocated as of 2022 is 22 billion TL. It can be stated that this amount is difficult to meet the activities and projects to be carried out for the empowerment of women. Graph 1 shows the appropriations allocated from the budget to the General Directorate on the Status of Women in the 2018-2022 period.

*Graph 1: Budget Appropriations of the General Directorate on the Status of Women (2018-2022, thousand TL)*



*Reference: Ministry of Treasury and Finance, 2022.*

It is seen that gender-responsive planning and budget studies continue in the period of COVID-19 in Turkey. The government has applied some policies to eliminate the grievances of the children who are deprived of the

support of relatives and caregivers due to the risk caused by COVID-19 and the working women who are considered responsible for their care in this process. Policies such as permits given to pregnant and lactating women in the first period of the pandemic, administrative leave provided for female staff with children under the age of 10, increasing cash transfers to women for health, maternity and pregnancy, and loan support provided by the Ministry of Commerce to women's cooperatives can be considered in this context. Again, regardless of the way of working in public institutions, the introduction of remote and flexible working methods, the implementation of a short-time working allowance to prevent layoffs in the private sector, the Ministry of Family and Social Services' public institutions, guesthouses, hotels and dormitories in 49 provinces, a total of 65 facilities are subject to violence within the scope of COVID-19. Applications such as providing shelter for the victims and increasing the use of the Women's Support System (KADES) Mobile application on smartphones can be counted within the scope of policies aimed at directly or indirectly preventing gender inequality in Turkey.

However, there are some criticisms that the government does not adequately intervene in the needs and inequalities arising from gender during the epidemic period. First of all, although the possibility of individuals being exposed to domestic violence has increased due to social isolation and calls to stay at home during the COVID-19 period, seems that the measures taken by the government are not sufficient. Secondly, the economic bottleneck, which is one of the effects of the epidemic process, is the fact that support policies have not been implemented to respond to the fact that women are more disadvantaged than men (Sumbas, 2021, p. 159). On the other hand, a significant part of the regulations enacted covered parents working in the public sector, and private sector employees were left vulnerable.

## **5. Applying Gender-Responsive Planning and Budgeting**

When we look at the economic and social status of women and men, their participation in political and cultural life, and their contribution to welfare through paid and unpaid jobs, seen that they lead different lives. This means that women and men often have different priorities, different needs, and different relationships. Public policies that do not take these differences between men and women into account have consequences that increase gender inequality. In this context, "Gender Responsive Planning and Budgeting" is a strategy that aims to influence political priorities to ensure that women's interests, needs, and priorities are better represented in the budget process (Klatzer, 2012, p. 16, 18).

The general trend in today's contemporary societies; is prevent all kinds of practices that lead to gender discrimination between women and men and to ensure equality between women and men. At this point, various responsibilities are imposed on all institutions of the state. The state, which is the political decision-making authority, should engage in practices that ensure equality between women and men in its institutions. At this point, gender-responsive budgeting is an important tool that can help the state. Because the main financial tool for the state to eliminate gender discrimination is the budget (Tüğen & Özen, 2008, p. 9). In this context, the main responsibility in the implementation of a gender-responsive budget rests with the public authorities that carry out the planning. The inclusion of government representatives and external stakeholders in the process, besides being a requirement of the budget right, ensures that the planning works more optimally and effectively. Because external stakeholders play a complementary role in the effective implementation of gender-responsive budgeting. However, very important to comply with some principles while planning, in terms of ensuring good governance. One of these principles is transparency and the other is the principle of participation. Thus, since the participation of external stakeholders in the process will result in supporting public authorities and their decisions, the results of gender-responsive budgeting and implementation will gain legitimacy (EIGE, 2020, p. 11).

The first issue to be considered in gender-responsive planning and budgeting is how public authorities will find an effective and fair solution that will strengthen gender equality in their decisions regarding income and expenditures. In this context, the government should consider the advantages and disadvantages of the options, including their possible effects on groups of women and men, when evaluating direct and indirect tax options. Because taxation policies can have direct effects on gender relations by placing women-headed households at a disadvantage within the paradigm of the male breadwinner. Similarly, income taxes affect labor force participation in light of women's responsibilities within the household. For example, while many working women spend some of their income on nurseries for their children, these expenses may not be deductible from taxable income. Therefore, maintaining equity and promoting economic growth while earning sufficient income is a difficult political action to take (Wehner & Byanyima, 2004, p. 12).

On the other hand, considering that gender equality is a concept directly related to development, appropriations allocated within the scope of gender-responsive budgeting should help women access basic services in the economy and production. In this context, public finance priorities should be redefined among existing sectors, and appropriations that will



contribute to the realization of gender equality and sustainable development should be reallocated (Vouhé & Droy, 2018, p. 13). Thus, gender-responsive budgeting constitutes an important financial power for eliminating the issues that cause discrimination between women and men and raising the status of women in society (Tüğen & Özen, 2008, p. 9).

As a result, it is accepted that social and economic differences between men and women cause significant differences in government resource allocation and expenditures; especially, in sectors such as public health, public education, public housing, public transport and the care economy. Structural differences between men and women refer to women earning less and saving less at interrupted intervals (as a result of taking time off or working part-time in order to raise children), women being over-represented in the unpaid care economy, women having discontinuous work histories and, women disproportionately being victims of sexual violence (Barnett & Grown, 2004; Marks Rubin & Bartle, 2005; Sharp, 2003; Stotsky, 2007). Hence, COVID-19 pandemic funding and stimulus packages, and, public budget statements which are presented as 'neutral' financial aggregates can hardly be unbiased or impartial if government revenue and government expenditure decisions have differential impacts on men, women, transgendered, disabled and minority populations (Elson, 1999; Viswanath & Mullins, 2021, p. 236-237).

## **6. Conclusion**

Data from gender-responsive budgeting, as seen from country examples, show that there is still a long way to go before current budgeting can reach a satisfactory level worldwide. Particularly, the COVID-19 pandemic, which has made its impact felt globally in the recent period, and the international agreements signed by the UN on the Sustainable Development Goals have shown that gender-responsive budgeting should continue effectively and urgently. When the results of the pandemic are examined, seen that the epidemic has different effects on women and men. Obligations such as home and child care, especially imposed on women, have caused women to lose their jobs and sometimes be exposed to domestic violence. In this respect, seen that there is a greater need for gender-responsive budgeting, especially in the post-pandemic period.

When gender-responsive budgeting is evaluated in terms of Turkey, seen that some problems are encountered. First of all, seeing that the budget allocated to this subject is insufficient, as well as the budgeting is not done consciously and the planning is not realized effectively. On the other hand, although the importance of sensitivity on this issue is known by local governments and other institutions apart from the central government,

seen that no planning has been made and adequate incentive policies have not been implemented. These policies mostly consist of projects and activities carried out with international cooperation. In this context, local administrations and provincial organizations; are very important to organize meetings to raise awareness of women and girls, to provide training on domestic violence and child abuse, and establish a permanent organization by local administrations create gender-responsive policies. This organization should work with an understanding of participation and transparency, and the participation of residents in planning and budgeting processes should be strongly supported.

On the other hand, the development plans of the countries reflect the state's perspective on gender equality and reveal the ideas regarding the adoption of an egalitarian approach in the planning process. However, when it is looked at the development plans prepared by Turkey, can be said that the public authorities contributing to the preparation of the plans have an understanding that is far from gender equality. To raise awareness on this issue, first of all, it is necessary to establish a database on gender. In this context, should be ensured that the data presented to the public by all ministries are classified by gender. Afterward, the problems and inequalities should be determined and the necessary appropriation items should be determined for their solution. The last and most important stage is the monitoring stage. It is understood at this stage whether the expenditures made are effective in solving the problems. If the results are unsatisfactory, policies need to be reorganized and resources need to be redistributed.

As a result, gender-based budgeting consists of a system that imposes some financial responsibilities on the state so that human beings can reach the place they deserve. This type of budgeting isn't just about women or girls. The inequality that covers a certain segment today may also cover another segment tomorrow. Therefore, as a requirement of sustainable development and increasing human welfare, gender-responsive budgeting offers equality that is the right of every segment.

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# 4

## COVID-19 AND SOCIAL POLICIES FOR WORKING LIFE

Yeşim Çam<sup>1</sup>

Coşkun Karaca<sup>2</sup>

### *Abstract*

*Today's welfare state, which gives individuals an equal chance to reach socio-economic rights and guarantees a minimum standard of living, also plays an active role in overcoming the problems experienced in the production processes and the problems experienced in times of crisis. As a requirement of this role, Turkey; During the COVID-19 pandemic period, many policies were implemented to compensate for the losses of the economic and social problems caused by the pandemic. The available data on Turkey show that the economic and social problems caused by the pandemic will have permanent effects on employment, income and working conditions. As a matter of fact, the contractions in production caused by the restrictions brought by social distance and quarantine; and the high inflation and unemployment experienced in the Turkish economy in the same period, have led to effects that leave individuals vulnerable. Turkey's first policy measures to mitigate these effects in the short term were to support businesses, eliminate social difficulties, and stabilize income and employment. Although these policies are generally realized by considering short-term targets during the pandemic process, it is expected that the policies to eliminate the destruction after the pandemic will be longer-term. In this context in the study, such social policy measures to eliminate the effects of the pandemic are explained.*

*Keywords: COVID-19 Pandemic, Economic and Social Policies, Welfare State, Crisis*

*JEL Codes: H5, H55, H12*

### 1. Introduction

Today's welfare state, which guarantees a minimum living standard to its citizens by giving individuals equal chances of reaching economic and social opportunities, also plays an active role in overcoming the problems experienced in production processes or crisis periods (Seyidoglu, 1999, p. 497; Seyyar, 2008, p. 359). The COVID-19

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pandemic, which is one of these crises, is regarded as a global crisis with economic, social, and political effects as well as a health-related crisis (Yorgun, 2020, p. 100). As a matter of fact, although such large-scale crises have the potential to reshape the country for the benefit of all through possibilities such as preventing inequality and establishing justice, the plans of governments to ensure economic efficiency cause the social policies to be implemented insufficiently.

Since the 2000s, many countries that want to achieve their sustainable development goals have made significant progress in this regard. However, with the year 2020, when the COVID-19 pandemic became widespread, these efforts came to naught and the working poverty rate, which was 6.7% in 2019, reached 7.2% in 2020. This increase in the poverty rate, when expressed numerically, meant that 8 million workers remained poor (ILOSTAT, 2022a). When the number of unemployed and deprived of social protection is considered, a more dire picture emerges. In the report published by the ILO (2021), it was stated that the world was caught unprepared for the COVID-19 pandemic and during the pandemic period, 53% of the global population lived without benefiting from national social protection systems and without any income security (ILO, 2021).

Compared to the health crises experienced in the past, it should be considered normal to see such an effect. In addition, since the current pandemic crisis emerged in an environment where the real markets are globalized and countries are becoming more and more dependent, it can be said that the impact of this crisis will be more severe than in the past. However, today, social welfare state practices have become widespread, and the budget resources of governments have increased incomparably with the past. The question to be asked at this point is what should be the content of the social policies that governments will implement in order to overcome the crisis with the least damage.

The main features of such global crises are manifested in the form of unemployment and income deprivation. In this respect, governments should focus on social policies as well as economic policies in order to solve these problems. Social policies, which include measures aimed at goals such as making income distribution fair, improving education and health services, and bringing the unemployed into working life, also play an important role in the development of countries. In this context the study focuses on two main issues. First, it was analyzed whether the social policies implemented during the COVID-19 process in Turkey were successful or not. In this context, many policy measures have been examined, especially short-time working allowance, cash wage support, minimum wage

support, social assistance for disadvantaged groups and wage guarantee fund. Afterwards, the possible economic and social effects of the policies to be implemented after the pandemic were discussed.

## 2. COVID-19 Outbreak and Its Effects

COVID-19 is a type of disease caused by a new coronavirus called SARS-CoV-2. This new virus was first learned after a series of respiratory infections in Wuhan, People's Republic of China on 31 December 2019, and was defined as a global pandemic by the World Health Organization (WHO, 2021a) with the rapid spread of the disease to countries. The pandemic has killed more than 6 million people as of May 2022 (WHO, 2022).

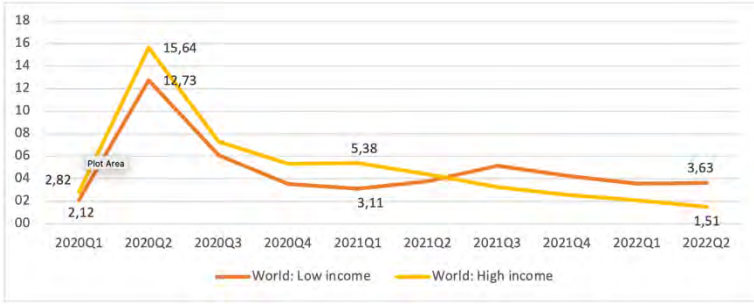
The rapid spread of the pandemic and the high perceived lethality level of the disease prompted countries to take many measures. One of these measures is the practice of quarantine, which is a social isolation method. In this context, curfews were imposed in countries such as Germany, France, Italy, Belgium and the USA for a while, except for exceptional circumstances, and similarly in Turkey young people under the age of 20 and the elderly over the age of 65 were prohibited from going out for a certain period within the scope of the curfew (Kıvılcım, 2020, p.19).

The problems posed by the COVID-19 outbreak differ from classical economic crises. In classical recession situations, there were mostly problems on the demand side, while in the COVID-19 pandemic, demand decreased on the one hand, and on the other hand, problems arose on the supply side. The outage of the enterprises and the quarantine of the company personnel caused disruptions in production. In this process, shopping malls have decided to close, especially service sectors that have face-to-face contact with consumers have started to experience significant difficulties. In addition, the environment of insecurity and uncertainty has caused the consumption tendencies of spending groups to decrease (Durmus and Sahin, 2020, p. 926).

With the onset of COVID-19, one of the most affected areas has been the working life. As a result of social isolation practices, economic life has been adversely affected, mismatches in labor supply and demand have begun to be experienced in labor markets, and the prohibitions and restrictions applied have led to a decrease in economic activities. Businesses had to downsize or cease their operations temporarily or permanently. With the spread of the virus, the health of workers was adversely affected, their mobility was restricted, and labor supply and demand came to a standstill

(Ozkan, 2021, p. 99). Graph 1 shows the losses in working hours in low- and high-income countries during and after the pandemic.

Graph 1: Working hours lost due to the COVID-19 crisis (%)



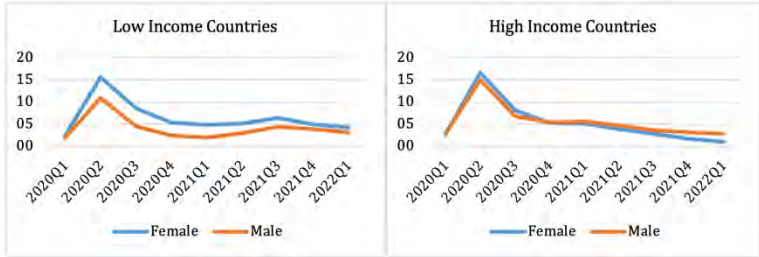
Source: ILOSTAT, 2022b.

If it is pay attention to Graph 1, the period in which the loss in working hours was highest in both country groups was the 2020Q2 period, when the COVID-19 measures started to become more frequent. Losses in working hours are higher in high-income countries during this period. However, after a quarter when full closure measures have been reduced, losses in working hours have also decreased, and lost working hours in high-income countries have fallen below pre-pandemic rates (ILOSTAT, 2022b). The main reason for this improvement in high-income countries is the high vaccination rates in these countries, and thus the slowdown in the spread of the virus. Low-income countries, on the other hand, have experienced the economic and social effects of the crisis more deeply due to the limited resources they have and the inadequacy of the measures taken within the scope of combating the pandemic. Indeed, less than one in ten have been fully vaccinated in the African region while four in five have been vaccinated in 22 mostly high income countries (WHO, 2021b).

Another problem that emerged during the COVID-19 pandemic period is the issue of social inequality in the working conditions of men and women. During the COVID-19 era, women experienced greater economic insecurity globally due to gender roles that view household and care work as “women’s work” (UN, 2020). The increased domestic responsibilities of COVID-19, including housework and taking care of younger siblings, have also made adolescent girls one of the most affected by the pandemic. It is estimated that as many as 20 million girls of secondary school age will be permanently out of school due to the pandemic in low- and middle-income countries (FP, 2021, p. 9). This obligation has resulted in women leaving their jobs in some countries where gender inequality prevails.

Graph 2 shows the loss of working hours between men and women in low- and high-income countries.

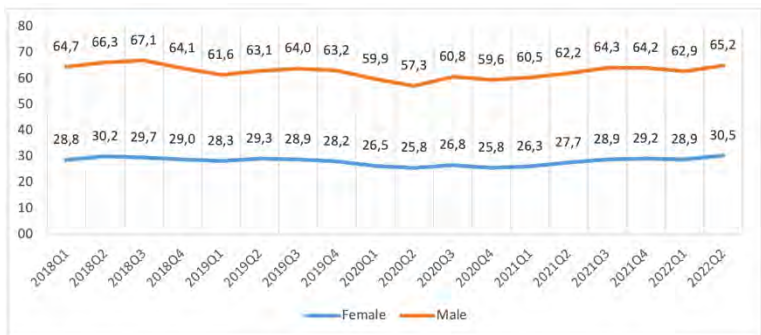
*Graph 2: Working hours lost due to the COVID-19 crisis, by sex (%)*



Source: ILOSTAT, 2022b.

As can be seen in Graph 2, the loss of working hours for women is higher in low-income countries. Because in developed countries where social policies are more developed, pregnant women and women with children are given paid leave to spend more time on housework and care work. However, it seems that such policies are less implemented in low-income countries (OECD, 2020). This practice results in the forced resignation of women from work in these countries. A similar situation is also valid for Turkey. As seen in Graph 3, there was a decrease in the employment rates of women in the second quarter of 2020, when the pandemic became widespread in Turkey. However, when the aforementioned decrease rates are compared with other countries, it is seen that the losses are less in Turkey.

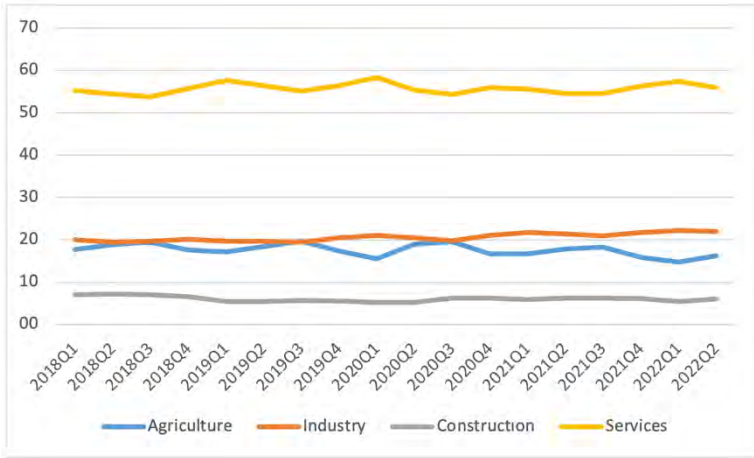
*Graph 3: Employment Rates in Turkey, by Sex*



Source: TSI, 2022.

It is stated by the public that the dismissal ban, short-time working allowance and cash wage support, announced by the government at the very beginning of the pandemic, have an important role in preventing the decline in employment rates in Turkey. As a matter of fact, when it is look at Graph 4, which shows the employment rates by sectors in the country, it is seen that the employment measures implemented during the pandemic period were successful in preventing layoffs.

Graph 4: Employment Rates by Sectors (%)



Source: TSI, 2022.

Although the proponents of the free market economy argue that such regulations of the state against the market distort the functioning of the market, such government interventions are considered legitimate considering the magnitude of the negative externalities that will arise due to the layoffs. As a matter of fact, the closure measures implemented within the scope of the pandemic measures, as well as the decrease in total demand due to layoffs and permanent deprivation of wages, could have caused the effects of the pandemic on the real market to be profound. Therefore, today's welfare state; just as it implements some regulations in the fight against cigarettes, alcohol and drugs or in the prevention of inequality, which may cause a decrease in social welfare, it should be take measures to prevent mass dismissals in large-scale crises such as pandemics.

### 3. Social Policies Applied in Working Life During the COVID-19 Pandemic

Past country experiences show that the policy measures implemented by countries to get out of global crises differ from each other and some of them emerge faster than the recession and social problems caused by the crisis as a result of successful policies. In this context, in addition to the large number of assistance provided to disadvantaged groups in Turkey, in order to relief the individuals affected by unemployment, unemployment benefits were provided, short-time working allowance was introduced, cash wage support was provided, and a wage guarantee fund was implemented for employees whose workplaces were closed.

#### 3.1. Unemployment Benefit

Unemployment benefit is payments to insured unemployed people for a certain period and amount in case they meet the required conditions stated in the law. To be eligible for unemployment allowance, the following conditions must be met (TEA, 2022d).

- I. Being unemployed out of his/her own will and fault,
- II. Being subject to a labour contract for the last 120 days before the termination of the labour contract,
- III. Having paid unemployment insurance premium for minimum 600 days within the last three years before the termination of the labour contract,
- IV. Having applied to the nearest İŞKUR unit in person or online within 30 days after the termination of the labour contract.

The daily unemployment benefit is calculated as 40% of the insured's average daily gross earning which is calculated by taking into account the earnings based on premium for the last 4 months. The amount of unemployment benefit calculated in this way cannot exceed 80% of the gross amount of the monthly minimum wage. Unemployment benefit recipients are covered by the general health insurance, and only the general health insurance premiums are paid for the related persons from the Unemployment Insurance Fund for the days during which unemployment benefits are paid. The dependents of the recipients of the benefit can also benefit from health services within the scope of the persons benefitting from general health insurance (TEA, 2022d). Table 1 shows the number

of people benefiting from unemployment benefits and their payment amounts during the pandemic period in Turkey.

*Table 1: Number of Persons Benefiting from Unemployment Allowance and Payment Amounts in Turkey*

	Number of Unemployed Applying for Allowance	Number of Unemployed Benefiting from the Allowance	Payment Amount
2018	1.635.111	841.847	5.865 million TL
2019	1.955.041	1.013.056	7.985 million TL
2020	1.510.856	509.538 <sup>a</sup>	7.978 million TL
2021	1.471.480	647.215 <sup>a</sup>	5.960 million TL

Source: TEA, 2022a.

As seen in Table 1, the number of people benefiting from unemployment benefits increased during the years when the pandemic caused high deaths and was felt heavily. By 2021, there was a decrease in the number of unemployed who applied for benefits and fell below the pre-pandemic period.

### 3.2. Short-Term Employment Allowance

In cases where the weekly working hours are temporarily reduced by at least one third due to a compelling reason such as short-term employment or a crisis, or the activity is stopped completely or partially for at least four weeks without the condition of continuity, an income support is given to the insured for the period of not working for a timespan not exceeding three months (TEA, 2022b). With this practice, it is aimed to prevent mass layoffs and to maintain the ties of workers who have been taken on unpaid leave with the workplace. Thus, in temporary situations, the interests of the worker, employer and the public are taken into account (Calik, 2019, p. 306).

The COVID-19 outbreak was included in the scope of compelling reasons arising from periodic situations due to external effects with the Decision dated March 19, 2020 and numbered 31, and became the subject of short-term employment (TEA 2022a). Afterwards, the deadlines were extended with the President's Decision, due to the course of the pandemic. The short-term employment allowance tries to ensure the continuity of the labor demand in order to prevent the production losses caused by the pandemic from triggering unemployment. Daily short-term employment allowance; It is 60% of the daily average gross earnings calculated by taking into account the insured's earnings subject to premium for the last twelve months. The amount of short-term employment allowance calculated in this way cannot exceed 150% of the gross amount of the monthly

minimum wage. Table 2 shows the number of people who benefited from the short-term employment allowance and the amount of payments during the pandemic period.

*Table 2: Number of Persons Benefiting from Short-Term Employment Allowance and Payment Amounts*

	Number of Persons Benefiting from the Allowance	Payment Amount
2018	1.393	843.000 TL
2019	105.396	181.808.000 TL
2020	3.743.473	29.515.374.000 TL
2021	122.332	13.851.773.000 TL

Source: TEA, 2022a.

If it is pay attention to Table 2, the number of people benefiting from the allowance has increased by 35 times compared to the previous year, in 2020, the date when the short-term employment allowance was accepted. In 2020, a total of 29 billion TL was paid to 3.7 million people.

### 3.3. Wage Guarantee Fund

Wage guarantee fund is the fund that covers the 3-month unpaid wage receivables of the workers in cases where the employer who employs insured workers under the service contract declares a bankruptcy, obtains a certificate of insolvency, and becomes unable to pay due to bankruptcy or postponement of bankruptcy (TEA, 2022c). Table 3 shows the number of people who benefited from the wage guarantee fund and the amount of payments during the pandemic period.

*Table 3: Number of Persons Benefiting from Wage Guarantee Fund and Payment Amounts*

	Number of Persons Benefiting from the Allowance	Payment Amount
2018	20.865	81.027.000 TL
2019	41.535	156.954.000 TL
2020	10.436	48.665.000 TL
2021	6.643	34.281.000 TL

Source: TEA, 2022a.

Looking at Table 3, it is seen that the number of people benefiting from the wage guarantee fund increased during the pandemic period. In 2019 and 2020, a total of over 200 million TL was paid to approximately 52 thousand people.



### 3.4. Cash Wage Support

Cash wage support was added as a temporary article to the law no. 4447 with the law no. 7244 dated April 17, 2020. According to this regulation, it is stated that cash wage support will be given to the workers who are on unpaid leave by the employer, who cannot benefit from the short-time working allowance, or who are not entitled to unemployment benefits when they are dismissed. In this context, support; It started to be applied as 39,24 TL per day (1,177 TL per month) in 2020 and 47,70 TL (1,431 TL per month) in 2021. The payment amount was increased to 50 TL net daily (1,500 TL per month) with the Law published on April 22, 2021 (TEA, 2022a). Table 4 shows the number of people benefiting from cash wage support and their payment amounts.

*Table 4: Number of Persons Benefiting from Cash Wage Support and Payment Amounts*

	Number of Persons Benefiting from the Allowance	Payment Amount
2020	2.291.754	7.225 Million TL
2021	1.669.733	6.790 Million TL

Source: TEA, 2022a.

Looking at Table 4, it is seen that in 2021, when the effects of the pandemic decreased, cash wage support decreased by approximately 30% compared to the previous year. In 2020, a total of 7 billion TL in cash wage support was provided to 2.3 million people.

### 3.5. Social Assistance for Disadvantaged Groups

With the Social Protection Shield Program initiated by the Ministry of Family, Labour and Social Services, support packages were implemented for employees from all sectors and those in need. Within the scope of the package, social assistance measures such as Social Support Program, “We are self sufficient, Turkey” help campaign, Short-time Work Allowance, Cash Wage Support and Unemployment Allowance were taken. With the Social Support Program, 1000 TL support was provided to approximately 6.4 million households (TMLSS, 2021a). With the Full Shutdown Social Assistance Program implemented later, support worth 1100 TL in cash was provided to over 2 million people in need (TMLSS, 2021b). Apart from these, the amount of support payments provided through the regular aid program has been increased. In this context, all social assistance amounts given in Turkey are shown in Table 5.

Table 5: Social Assistance in Turkey

	2018	2019	2020	2021
Total Amount of Social Aid Expenditure (TL)	43 billion TL	55 billion TL	69 billion TL	97,8 billion TL
Share of Total Social Assistance in GDP	1,16%	1,24%	1,42%	1,74%
Number of Households Benefiting from Social Assistance	3.494.932	3.282.975	6.630.682	5.903.515

Source: Ministry of Family, Labour and Social Service, 2022.

Looking at Table 5, it is seen that the number of households benefiting from social assistance doubled in 2020 due to the pandemic. The total amount of social expenditure increased significantly during the pandemic period. However, the share of social assistance in GDP is at a low rate of approximately 1.7%.

In Table 6, employment measures implemented within the scope of the pandemic in some selected countries are listed. Like all other measures taken against the COVID-19 pandemic, measures for employment also differ according to the political and economic structures of the countries. It is observed that countries generally resort to wage subsidies in their employment measures. With the spread of the pandemic, subsidies for sick leave, support for informal or self-employed workers, and new working arrangements are implemented to eliminate the negative effects of this process.

Table 6: Measures Taken in Employment Against the Covid-19 Pandemic in Selected Countries

	Turkey	United States of America	United Kingdom	China	Germany	Italy	Brazil	Sweden	Russia	France	Spain	Greece	India	Indonesia
Wage subsidies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Unemployment allowance	✓					✓			✓	✓				
Support for informal or self-employed			✓		✓	✓	✓		✓	✓	✓			
Subsidies for sick leave	✓	✓	✓		✓	✓		✓	✓	✓	✓			
New working arrangements				✓	✓	✓	✓	✓			✓	✓	✓	
Vocational training subsidies				✓										✓
Dismissal restrictions												✓		

Source: World Bank, 2022.

Looking at Table 6, it is seen that wage subsidies are applied in all countries except Spain. Wages were guaranteed for sick and quarantined employees, and short-time work arrangements were made to avoid layoffs. Tax

adjustments were made to compensate the self-employed and self-employed with direct subsidies and lost income. Monthly payments were made to disadvantaged groups such as the elderly, the disabled and those who are unregistered. Up to three months of additional paid sick leave for workers with children in the United States, while in Spain workers are allowed to reduce their working hours if they need to care for their dependents. Subsidies for vocational training have been increased in China. Local incentives have been given to enable companies to conduct vocational skills training online. Various subsidies have been given by the state to enable the use of teleworking technologies in Italy (World Bank, 2022). Table 7 shows the measures taken within the scope of combating the pandemic in some selected countries.

*Table 7: Economic Measures Taken in the Fight Against the COVID-19 Pandemic in Selected Countries*

<b>United States of America</b>	On March 11, 2021, the American Recovery Plan was announced, with an estimated cost of \$1,844 billion (about 8.8 percent of 2020 GDP). Unemployment benefit programs were expanded under this plan, and \$1,400 in direct incentive payments were made to eligible individuals. The coronavirus Relief and Economic Security Act was later enacted, amounting to an estimated US\$2.3 trillion (about 11% of GDP). US\$ 268 billion was used to expand unemployment benefits under the law.
<b>United Kingdom</b>	Firms were provided with a support of £1,000 per employee. Low-income people and household members who needed to self-isolate and were unable to work received £130 and £182 per day, respectively. A 6-month Job Assistance Scheme in which employers pay staff wages for hours worked, with government and employer each paid one-third of their equivalent salary of up to £697.92 per month for hours not worked. An additional £59bn financial stimulus (about 2.6 percent of GDP) was announced on 3 March 2021. Support for households is valued at around £20 billion.
<b>China</b>	Fiscal measures were announced at an estimated RMB 4.9 trillion (4.7 percent of GDP), of which RMB 4.2 trillion is estimated to be implemented in 2020.
<b>Germany</b>	The federal government has adopted three additional budgets. <ul style="list-style-type: none"> <li>• €156 billion in March 2020 (4.7% of GDP)</li> <li>• €130 billion in June 2020 (3.9% of GDP)</li> <li>• €60 billion (1.7 percent of GDP) in March 2021</li> </ul> In addition to the federal government, many local governments have been paid €141 billion in direct support to support their economies.
<b>Italy</b>	On 17 March 2020, the government adopted the Cura Italia emergency package of approximately 25 billion euros (1.6 percent of GDP). <ul style="list-style-type: none"> <li>• Measures to protect the jobs and support incomes of dismissed workers and self-employed workers (10.3 billion €)</li> <li>• More income support for families (€14.5 billion)</li> </ul> On March 19 and May 20, 2021, the government approved an additional support package of approximately €72 billion, aimed at expanding support for businesses and workers affected by the pandemic and stimulating the economy.
<b>Brazil</b>	A series of fiscal measures have been announced, with a direct impact on the primary deficit of up to 12 percent of GDP in 2020, with 7.2 percent of GDP.
<b>Sweden</b>	Fiscal measures announced and implemented for 2020 amount to SEK 803 billion (16 percent of 2019 GDP). For 2021 and 2022, the Government has proposed comprehensive fiscal stimulus packages worth SEK 105 billion and SEK 85 billion (2.1 and 1.7 percent of 2019 GDP).
<b>Russia</b>	The total cost of the 2020 financial package is estimated to be around 15.5 percent of GDP and the cost of social expenditures announced in April 2021 is estimated to be 0.3 percent of GDP in two years.

<b>France</b>	In the period of March-November 2020, four different budget laws were enacted, and the financial measures allocated for the crisis increased to approximately 180 billion Euros (about 8 percent of GDP).
<b>Spain</b>	Temporary Employment Adjustment Programs have been implemented. In this context; <ul style="list-style-type: none"> <li>• Payment of unemployment benefits for temporarily laid off workers (approximately € 24.7 billion),</li> <li>• Payments to those affected by the suspension of economic activity (approximately €6.5 billion),</li> <li>• Increasing the sick base wage (€1.6 billion) for workers or quarantined workers infected with COVID-19,</li> <li>• Reinforced unemployment protection (€800 million) for workers who are unable to stay in work but do not qualify for unemployment benefits;</li> <li>• Providing additional allowance to workers whose unemployment benefits have been exhausted (€180 million),</li> <li>• One month's additional allowance (€18 million) to temporary workers who are not entitled to unemployment benefits.</li> </ul>
<b>Greece</b>	It implemented a package of fiscal measures that accounted for approximately 13.7% of GDP (EUR 23.5 billion) in 2020, including loan guarantees financed from national and EU sources. The government expanded the support measures selected in line with the implementation of new movement restrictions in November 2020 and March 2021, increasing the cost of fiscal measures to around 8.5% of GDP in 2021.
<b>India</b>	In-kind and cash transfers to low-income households (1.2% of GDP) Wage support and employment for low-wage workers (0.5% of GDP)
<b>Indonesia</b>	In 2020, the government paid a total of IDR 579.8 trillion (about 3.8 percent of GDP) as part of the national economic recovery program.

*Source: IMF, 2022.*

The United States is one of the countries with the highest number of cases and deaths. In order to prevent the recession caused by the pandemic in the country, financial measures that caused an appropriation of a large amount from the budget were announced. Comprehensive measures were also taken in countries such as Germany and Spain, where the pandemic was felt heavily. Most of the financial measures were aimed at the unemployed, low-income groups and the labor market. Again, in the United Kingdom, Italy and France, a significant amount of support packages was announced in the fight against the COVID-19 outbreak.

#### 4. The Future of Social Policies

It has been understood that the state is the only actor with the necessary legitimacy in such crisis periods when multidimensional problems arise, and it has been seen that the financial measures and bailout packages announced by the governments are important in overcoming the crises. Thus, with economic and social policies, the nation state rose again and returned to its decisive role (Valiyeva, 2020, p. 392). However, the global problems caused by the pandemic show the need for a global welfare regime rather than national welfare states. While this regime takes into account the institutional, economic and social characteristics of each welfare regime, it aims to share the global welfare beyond national welfare. At a time when national interests conflict in international relations, it is an

important problem how to implement the global welfare regime. Although it seems difficult to realize such a structure in today's political structure, it is possible to create such a regime with new economic and political regulations (Aysan, 2020, p. 684).

What happened during the COVID-19 pandemic period has shown how important international organizations are for public health, welfare and safety. In this context, the World Health Organization should be supported to work in coordination with other international or regional organizations in addition to combating the obstacles to global health. Considering the effects of this crisis, it should be better prepared against a possible crisis in the future (Yavan, 2020, p. 179).

Pandemics that have broken out throughout history have shown that public health infrastructure needs to be improved in order to be prepared for pandemics. The way to reduce the pandemic and its economic consequences is to make investments to strengthen the health infrastructure. In addition, attention should be paid to regulations regarding social policies in order to eliminate their social effects. Investments to be made in these areas should be made as long-term investments rather than short-term political measures. Investments made in this way will reduce the costs of a possible pandemic in the future (Ak Bingül et al., 2020, p.198).

How to finance social policies, which have become more important with the COVID-19 pandemic, is also a matter of debate. In this period, when the country's economies are stagnating and borrowing rates increase, it becomes difficult to allocate resources for these policies. In this context, first of all, countries with high debt ratios should reduce their debts to a reasonable level. With the arrangements for efficient use of public expenditures and increasing income, financial resources that can realize social policies will be created.

## **5. Conclusion**

The events experienced during and after COVID-19 prove why countries should attach importance to social policies. In this process, while countries with social policy tools and financial resources to realize them quickly found solutions to the problems caused by the pandemic, countries lacking these faced serious problems due to lack of resources. In this regard, in today's world where the effects of the pandemic continue and there is a possibility of encountering such an pandemic in the future, countries need to make the necessary improvements in their social policies.

First of all, the adaptation problems experienced by the countries in the social transformation at the beginning of the pandemic showed that a long-term solution was needed in this regard. Indeed, given the more devastating effects of the crisis on youth, low-skilled workers and vulnerable groups, the structural weaknesses these groups face in the labor market need to be taken into account. Because today's market demands new skills in a more digitalized and carbon neutral market view. In this regard, public authorities should prepare educational plans that will enable school-age youth, the unemployed and those who are currently in working life to work with information technologies. On the other hand, the short-time working regulations implemented by almost all countries within the scope of social distance and quarantine measures have somewhat limited the negative impact of COVID-19 on the labor market. It is possible to make such practices activated in times of crisis permanent, taking into account the structural situation of the economies and the human resources in the country.

The developments in working life during the COVID-19 period have shown that more inclusive regulations should be made in the employment market. The education system, which limits the participation of young people in the labor market, especially youth unemployment and poverty, should be reconsidered, and innovative education policies that are thematically focused and adapt to the requirements of the day should be emphasized. Providing a higher quality of life for the young unemployed as well as other disadvantaged groups should be one of the main objectives. The practices carried out within the scope of the social state are macro-scale policies that cover all segments of the society and aim to provide social justice to the entire society. Therefore, policy implementations that do not limit these regulations only to working life but also include social life should be implemented.

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# 5

## GEORGIAN SOCIAL POLICY UNDER THE CONDITIONS OF THE COVID-19 PANDEMIC AND INFORMATION WARFARE

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### ***Abstract***

*Social policy, implemented by the state and other institutions, ensures the well-being of the society, its advantages and disadvantages are especially well presented in the background of important challenges. Such a challenge was presented by the Covid-19 pandemic, which showed us how important it is for countries to produce the right policies adopted at the national level which is directly connected to global politics. In the conditions of modern globalization, the problem of states has long gone beyond the boundaries of one country. The article discusses the consequences of the Covid-19 pandemic on the socio-political and economic situation of Georgia, reviews the effective steps and packages of social programs implemented by the country at the national level to ensure the well-being of citizens, and shows the need to increase communication between society and state institutions, especially against the background of information warfare, which is a real challenge for Georgia, especially in the conditions of the pandemic. The paper focuses on the main problems that arose in the healthcare and education system, many regions were unprepared for the transition to the remote mode, which was mainly due to the interruption of the Internet supply and problems with access to equipment. As for the health care system, the effective steps taken by the state should be evaluated positively, although there was also a problem here, which was related to the lack of communication, which led to an increase in the number of anti-vaxxers and a weakening of the public's trust in the government. The paper analyzes the impact of the pandemic on the country's economic situation, its prospects, and opportunities for its improvement.*

*Keywords: Social Policy, Pandemic, Regulation. Socio-economic, Government*

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## 1. Introduction

In the modern, globalized world, social issues are becoming more relevant day by day. Especially, it takes quite an important place in the states with the social market economy, where social policy is connected with the revival of the country. Social policy is aimed at ensuring the well-being of citizens; it is a system of interaction between social groups and society, where the main basis is a person.

The social policy implemented by the state and other institutions has a direct impact on the well-being of society. In this case, we have to say that the effectiveness of social policy is determined by analyzing the results of the implemented policy. The state should be a kind of guarantor of certain rights, especially such as equality, the achievement of which is the main basis of social policy. Even the equal distribution of resources so as not to violate equality in society. It means equal treatment, equal opportunity, and equal outcome. People should be provided with equal opportunities in the state, regardless of their gender, race, religion, and group (Amirgulashvili, 2018).

Freedom and Rights: there are different types of rights, for example, civil rights, social rights, political rights, right to education, right to employment, *etc.* (Alaverdov, 2021). Social right means social welfare, and social protection, which includes all the above and which is provided by the state. The concept of citizen plays an important role in determining the obligations of the state and the rights of the individual, which is part of social policy. A citizen has the right to demand that the state of which he is a member develop policies that ensure the protection of these rights (Chkopoia, 2022).

The goal of social policy is to achieve a harmonious order in society, avoid conflict and ensure social justice, peace, development, balance, and integration. It is worthy to say that conducting an effective social policy has a direct impact on the demographic picture of the country (UN, 2020). Its indicator is the background of birth and death, growth, and decline of the population. A social state is a condition of democracy. It provides full freedom and equal rights. It is necessary to discuss the concept of social democracy narrowly, the social state and democracy are in fundamental connection with each other, although this does not ignore the criticism of the social state, it is important to study the challenges of the social state, discuss the existing programs. Any democratic state is obliged to conduct a state policy based on the well-being of citizens, where resources will be distributed through justice, and where citizens will have equal development opportunities. In developing countries, the need to improve social policy, develop the system of social rights protection, *etc.* is particularly acute. The

social policy includes health care; education; unemployment; social security and others. It is related to a multifaceted process. Its object, as we mentioned, is the population of the country.

The need to improve social policy, including in Georgia, was particularly well demonstrated in the conditions of the Covid-19 pandemic (UN, 2020). The pandemic has shown us how the state cares for its citizens, how it develops welfare-related activities, and how it responds to the needs and wants of citizens. In this case, we should consider politics as a system of taking care of our citizens. In this case, the types of policies include payments and subsidies allocated to people who need care or who care for others. Care policy combines policies developed by different sectors, including labor, health, social care, education, and others (Daly, 2022). It is interesting how the leading European countries coped with significant challenges in all areas of social life during the pandemic, and what their policies were compared to developing countries, including Georgia. Health and education are the areas where the need to promote policy strengthening is most evident. Georgia, like other countries of the world, was forced to make quick and radically flexible decisions to respond to existing challenges.

## 2. Research Methods

The chapter is based on the following research methods which are mainly applied in political science: method of observation, method of document analysis, descriptive method, and method of system analysis

- Method of observation - a systematic, directed perception of a phenomenon or process, the features and properties of which are fixed by the observer. It has much in common with everyday perception when people follow political events of interest to them.
- Method of document analysis - the division of the whole subject into its constituent parts (sides, features, properties, or relationships) for their comprehensive study. The method is considered as one of the main applied methods since document analysis is the most economical research method. It allows quickly obtaining objective data about the system under study. However, not all the information can be reliable it needs to be verified through observation and surveys. Therefore, this method is used along with observation and questioning.

- Descriptive method - a type of scientific method, which is a system of procedures for collecting, primary analysis and presentation of data and their characteristics. The descriptive method has application in all disciplines of the social, humanitarian and natural science cycles.
- Method of system analysis - provides the following system methods and procedures for use in various sciences, systems: abstraction and concretization analysis and synthesis, induction and deduction formalization and concretization.

### **3. Socio-Economic Problems Caused by the Covid-19 Pandemic and the Role and Purpose of the State in their Regulation**

The Covid pandemic has put the states in front of a significant challenge, the issue of fighting against it has become equally important either for a large and powerful country or for a small or developing country. It is important to study the role and purpose of the state in the fight against the global challenge. To study the mentioned issue, the following questions should be answered. 1. What are the priorities and opportunities for the socio-political and economic development of the countries of the world? 2. What will be the impact of the current processes on Georgia - on the socio-economic and political situation of the developing country? Because today we all agree that the challenges faced by states in the modern globalized world have gone beyond the limits of one country and have become a global challenge. 3. What will be the perspective of development after the economic crisis for individual countries, including Georgia, since the issue of the need to improve social policy was important for us even before? One is obvious, the pandemic has become a real global challenge for the world economy, including the economy of Georgia. In the conditions of the pandemic, it became impossible to predict the expected results and damages, especially since the world economy was not ready to withstand such a big blow, which was further compounded by severe socio-political changes in Europe and other individual countries.

Any kind of crisis is characterized by uncertainty and instability, the same should be said about the Covid pandemic. Despite the success achieved in the medical sector, the world was in complete chaos and all attention shifted to the health sector, where the issue of saving human life became one of the priorities for each country. Large-scale challenges affect citizens' attitude towards the state differently, the social policy implemented by the country either increases trust in the state or decreases it. In any democratic state, society requires the government to take firm steps, even rational decisions, aimed at fundamental changes. Even in the conditions of the

pandemic, the world community demanded full intervention from the state in the process of managing the crisis, reducing social fluctuations, and maintaining stability.

States have different policies, differences can be observed even in democratic countries. A democratic state is committed to implementing an effective social policy for the benefit of citizens, based on the principle of justice and equality. In a democratic state, every decision taken by the government should be in line with the interests of the citizens.

The response to the Covid-19 pandemic has been constantly changing at the global level, most likely related to the availability of health care and financial resources. An important factor was the cultural factor, as well as the attitude and response of citizens to the restrictions imposed to manage the pandemic. People in East and Southeast Asia were more collectivist and responded quickly to early signs of the pandemic, easily complying with most of the restrictions imposed. Some countries in Eastern Europe, Australia, Scandinavia, the Middle East, Africa, and South America have also reacted quickly and imposed various restrictions. The response of Western European and North American countries was relatively slow, they tried to preserve the country's economy, which still failed, and in the end, the pandemic dealt a heavy blow to the economic situation of the countries of the world. They had hoped for a well-functioning health care system that they could take control of and solve the problem soon, but the situation has become unpredictable (Tang et al., 2022).

The first restriction that the countries introduced was a ban on border crossings, which was not enough. Ultimately, Western European and North American countries took a devastating economic hit from the impact of the COVID-19 pandemic during the first wave of March-June 2020.

Managing the pandemic proved to be extremely difficult even for the United States of America, which was supposed to be the best prepared in terms of overcoming the pandemic. Since it has the best health care system, although it had one of the highest death rates compared to other large and high-income countries. A key factor in the second wave of the COVID-19 pandemic was the rapid decision-making process, including the opening of borders to international travel.

#### **4. Citizens' Trust in the Government under the Conditions of the COVID-19 Pandemic**

In any situation, trust in the government is determined by the citizens being fully informed on any issue, which was especially difficult in the conditions of the COVID-19 pandemic, in the conditions of increased information warfare. Since disinformation propaganda was purposely carried out by individual countries to reduce public trust in the government. The information war turned out to be dangerous for any country in the world, where incorrect information was spread, both in terms of the origin and spread of the virus, as well as in the fight against it, which directly harmed the development of democratic institutions, contributed to a decrease in the level of trust in society, raised doubts about the effectiveness of the effective steps taken by the state (Chkopoia, 2021).

In the conditions of the COVID-19 pandemic, too many people were left without work, especially those whose work environment could not adapt to the remote mode, which led to a difficult economic background even in developed countries. Those who could not work from home were worried and asked the state to take appropriate steps. States responded differently to similar problems. Several countries including Georgia launched aid programs for their citizens to help them. In low-income countries, citizens often violated the rules of self-isolation and quarantine, as the state failed to ensure their economic stability.

#### **5. Information War and Arising Threats in the Conditions of the COVID-19 Pandemic in Georgia**

The COVID pandemic has made big losses to the countries of the world and has become a real challenge. The pandemic has become a real problem for developing countries as well, including Georgia, it has caused significant harm to such systems as health care, education, the country's economy, social politics, security, and others.

In the background of the current information war, effective social policy has become a real problem for the country. The effectiveness of the propaganda, both at the global level and in Georgia, was facilitated by the country's transition to the quarantine regime. The pandemic fundamentally changed the life of each person, the political agenda of the country, and the current crisis forced countries to make rational decisions. Propaganda messages spread during the pandemic had a great impact on the psychological state of citizens, their trust in the government was shaken, and the existing reality became unclear to the public, which contributed to the formation of mass distrust. The current information

war has become a real threat even for democratic and developing countries. A major factor that contributed to the effectiveness of information warfare was less communication between the public and the government. The lack of information is the main factor that contributes to the spread of misinformation and the growth of mistrust of the government (Lomidze, 2021).

Misinformation threatens every citizen, it limits their basic rights. In the conditions of the pandemic, several European states have taken effective steps to fight against it, although legal steps have been followed by the reduction of freedom of expression and the persecution of different political opinions, which is also an equally important problem for democratic countries, that is why state institutions must be very careful to overcome disinformation while taking measures. However, it is necessary to fight against it, since disinformation leads to the breakdown of democratic processes and violates fundamental human rights, including the right to expression (Lomidze & Janashia, 2022).

The above-mentioned problems are not new for Georgia, but Georgia faced a real challenge under the conditions of the Covid-19 pandemic. The Kremlin's information warfare goals are well known to the world. Russia has repeatedly carried out information warfare against Georgia, Ukraine, Estonia, the USA, Western European countries, and the USA. The goal of the Kremlin in Georgia is to undermine trust in the government, and in democratic institutions, which will certainly harm the political mood of the country and will ultimately allow it to easily achieve its geopolitical ambitions (Colomina, Margalef, & Youngs, 2021).

The COVID-19 pandemic has encouraged states to further refine their information warfare capabilities. In the conditions of the pandemic, the talk about conspiracy theory has become even more relevant. Opportunities for foreign intervention in the domestic politics of the country increased, and public opinion underwent formation.

In the information war, it was very difficult to convince the public about the effectiveness of vaccination, even in the face of high mortality. In Georgia, as well as in the world, inaccurate information regarding the effectiveness and risks of vaccination was spread. When vaccination was supposed to be the only chance of survival for society, a large part of the citizens became victims of the infodemia and expressed a complete distrust of vaccination and the government. The population was divided into two parts, a part that believed that vaccination was the solution to defeat the pandemic, and another part that believed that vaccination was a real threat to their health (Gomelauri, 2021). Moreover, the issue of vaccination has



repeatedly become the cause of conflict between certain groups or individuals in society. A certain part of the society was against the restrictions imposed by the government (NCDC, 2021).

It should be noted that our country has invested a lot of resources to solve existing problems, and effective policies have been implemented to solve economic, health, and educational problems, although citizens' mistrust has been caused by weak communication between the government and society. At the initial stage, the society was charged with the wrong, emotional background, which was later reflected in the country's domestic political situation. The lack of objective information certainly creates mistrust and doubt, and finally, certain information spread by anti-vaxxers has further aggravated the existing picture. It is a fact that the purpose of the current processes was to implement targeted actions, to reduce public trust in democratic institutions and the state as a result of an informational attack. A clear example of disinformation is the Lugar laboratory, which became a real target of the Kremlin, through the media and social networks, the Kremlin actively spread propaganda messages, most of which were far from the truth, but still managed to create a negative mood in society. A targeted, informational attack against the Lugar laboratory by the Kremlin is not new. Russia has always actively fought against the Lugar laboratory, which has been operating in Georgia for years. The Kremlin constantly spread disinformation that biological weapons were allegedly being created here, and thus tried to mislead the population, reduce trust in the US and the West, and the country's aspirations for democracy (Chkopoia, 2021).

Any state, including Georgia, should always be ready to engage in dialogue with society and have constant effective communication, to deal with the current crisis. Relevant institutions should create space for constructive interaction. The relationship should be transparent, information should be available to each layer of society. The state should help its citizens to get the correct and necessary information. Effective communication is the main factor that is necessary for the process of crisis management between the state and society, in the production of effective dialogue, which increases the trust of citizens. The Covid-19 pandemic clearly showed society that it is necessary to implement effective public policy and take care of the interests of society, which is also a necessary condition for the development of social policy (Lomidze, 2021).

In the conditions of the Covid-19 pandemic, it became necessary to provide state services remotely, it must be said that Georgia acted immediately in this regard. Today, search engines and social networks are the leading communication channels in our country. The delivery of state

services to citizens has indeed improved, in remote mode, but many problems and shortcomings have appeared. However, it should be noted that each service was tailored to the customer as much as possible and took into account their interests. Many services have become more flexible and sophisticated. The use of state services became available to all strata of the population. Several important reforms have been carried out at a fast pace, however, to popularize the carried out reforms, it is necessary to raise the awareness of the population and raise their awareness, which is a problem in Georgia at all levels, even among ethnic minorities. In this case, we have to say that firstly, it is necessary to raise the level of the state language, which needs the development of communication format.

During the conditions of the pandemic, gaps in the education system were identified as the main problem, and educational institutions switched to remote mode, however, the problem was caused by the interruption of the Internet in the regions, as well as the problem of access to technology by teachers and students, which hindered the effectiveness of the educational process. It became necessary for the state to develop a kind of system so that every citizen could have access to existing services. It is necessary to develop the right strategy, especially in crises, since getting an education is a fundamental human right, and the welfare state must take care of its citizens (Government of Georgia, 2015).

In August 2021, the International Non-Governmental Organization, National Democratic Institute (NDI) published a study in Georgia titled “Economy and Public Health are Still Top Priorities; Confidence in the country's governance is decreasing (NDI, 2021). In this study, the mood of the citizens was also reflected, where they spoke openly about the country's economic problem and the impact of the Covid pandemic on the socio-political situation of the country. The study also showed that the citizens of Georgia had a peculiar attitude towards vaccination, which was characterized by skepticism. 47% of the respondents of Georgian citizens openly refused to be vaccinated. The main reason for the mentioned results was the lack of communication with the population, which led to the weakening of the public's trust in the governing body (NDI, 2022). The survey was conducted in the period of July 13-25, 2020, among the 2016 respondents, according to the principle of selectivity, through telephone communication (NDI, 2022).

Correct and effective communication is essential to gain and maintain trust among your citizens. Although some effective steps have been taken by the state to manage the general background caused by the pandemic, including economic problems and disease management (e.g. compensation of unemployed people; hotels converted into Covid hotels, thus facilitating

private business and others) the level of satisfaction in society was still low, which was influenced by propaganda. The conditions of the pandemic have shown us well that infodemia goes further than the truth.

## **6. Crisis Management Abilities of Georgian Government**

For Georgia, as well as for all countries of the world, the pandemic has become a major challenge. In the first months of 2020, at the beginning of the pandemic, the economy of Georgia looked stable, as a result of the reforms implemented by the country, among them, Georgia became an easy country to do business, and tourism was the main direction. The average growth rate for the last three years was 4.9% (Ministry of Economics and Sustainable Development of Georgia, 2021). In 2020, it exceeded 5%. Against the backdrop of reforms carried out in the country, transparency has increased, which has helped to improve the quality of spending. In 2019, the unemployment rate in the country decreased to 11.6% (National Statistics Office of Georgia, 2022).

Under the conditions of the pandemic, economic activities were sharply reduced, which, of course, had a heavy impact on the economic development process of the country. The pandemic brought severe consequences to Georgia's trade partner countries, including the developed states of the European Union. Here we have to mention the decline of the tourism sector, which caused a real economic shock, and the national currency began to depreciate. Exports were restricted. Although the country's government had an immediate reaction to contain the pandemic and the spread of the virus, the consequences still had a heavy impact on the socio-political stability of the country. On January 29, the country banned flights from China, a high-risk country where the virus was found to have spread, resulting in other restrictions, including the suspension of education and the transition to a remote mode, ban on public and private transport, suspension of private businesses, public sector activities and other. A state of emergency has been declared in the country, a curfew has been imposed.

To reduce the negative impact, the Georgian government presented an anti-crisis plan. Many social packages were launched, and several measures to stimulate the economy was carried out. The main source of financing was the loan received from donors and the existing government deposit. The anti-crisis plan was transparent and its introduction and specific details were available to any citizen on the anti-crisis website of the government.

The initial stage of crisis management assisted citizens and entrepreneurs (subsidizing utility bills; postponement of bank loans for three months;

price insurance for primary consumption products and construction materials; six-month postponement of bank loan interest for small hotels). In the second stage, assistance was provided to citizens who suffered severe economic damage as a result of the pandemic, including the socially vulnerable citizens (temporary financial assistance was provided to citizens who lost their jobs as a result of the pandemic; one-time assistance was provided to self-employed persons; income tax was temporarily suspended for persons with an amount of less than 1500 GEL; VAT refund mechanism for business; commercial banks were given access to 600 million long-term resources; loan guarantee program was developed for business loans and others) (Government of Georgia, 2021).

The third phase included additional measures, including one-time grants for children, as well as university tuition fees and support for the self-employed.

## **7. The Post-Covid Pandemic Period and the Recovery of Georgian Economy**

The conditions of the post-Covid pandemic in Georgia are not very favorable, to change the difficult economic background, it is still necessary to take effective steps, especially in the background of increased taxes, increased loans, and difficult socio-economic and political situation, it is very important what the state's social policy will be for its citizens. To improve the social situation and protect social rights, it should be noted that Georgia successfully managed to coexist with the pandemic, which is very important, and it should also be noted that the health sector worked perfectly and made a significant contribution to the management of the pandemic.

From the beginning of March 2021, the recovery process of Georgia's economy was visible. Importantly, however, the post-pandemic economy is more vulnerable to current risks than it was during the pandemic.

In June 2022, 1 million travelers visited Georgia. To compare it to 2019 data, we can see that it indicates a 42% increase. Also, a good indicator is shown by the number of tourists, which reached 1.2 million, which constitutes about a 56.8% increase compared to the data of 2019 (National Statistic Office of Georgia, 2022).

In general, the pace of economic recovery is different in all countries, which is significantly influenced by the factor of what damage the country suffered during the pandemic and what the state policy was, what supporting measures it included. The recovery process of the economy

depends a lot on the number of vaccinated citizens, which is important in the fight against the virus. Countries with low vaccination coverage are still at high risk of pandemic outbreaks (Gomelauri, 2021).

## **8. Conclusion**

The Covid-19 pandemic has taken a toll on countries around the world, both in terms of demographics, economic, and social challenges. The economic crisis caused by the pandemic has already been assessed by the world as the biggest blow to the world economy since the Second World War. The nature of the crisis caused by the pandemic is completely unprecedented. In this case, we have to admit that Georgia, like the world's leading countries, needs a long-term period and an effective policy to recover from the economic shock. The conditions of the pandemic have accelerated some of the previously existing trends as much as possible, such as digitalization. It rearranged the world on completely new tracks and launched a new wave of change with a wide range of trajectories. Many governments responded quickly to the existing challenges, including the steps taken by Georgia, which in response to the global challenge implemented fundamental reforms in almost all directions. It should be noted that it certainly increases the possibility of social policy development in Georgia. The Covid-19 crisis was characterized by a multifaceted nature and unprecedented scale, its comparison with the economic crisis created in the world in 2008-2009 is completely irrelevant.

Often, the implemented reforms are designed for a short-term period, which makes it difficult to focus on the full resolution of existing problems. So the states must present a long-term plan and allocate priorities to increase the sustainability of the country's socio-economic systems (Coates et al., 2020).

As we have seen, the necessity to provide correct information plays an equally important role in the process of crisis management, which became even more clear in the conditions of the increased information war. Clear, accurate, transparent, and prompt communication between government and society is fundamentally important at all levels. First of all, it greatly helps the government to respond quickly to the needs of the citizens, and to conduct the right dialogue, which ensures that public trust in the government.

## **9. Recommendations**

1. The need to improve social policy was well demonstrated by the pandemic. Accordingly, states are obliged to increase the issue of

informing citizens, regarding each issue and to conduct an open dialogue with their citizens; to popularize the implemented projects so that the population has full information, and to improve the communication format.

2. Disinformation is a threat not only to developing countries but also to big states, therefore, the role of the state in fighting against it is important, to protect the interests of its citizens, appropriate and effective steps should be taken. It was possible to effectively use the television space and other means of communication during the conditions of the pandemic since the addiction of citizens to the information receiving systems was greatly increased. Access to objective information from a reliable source would allow citizens to receive accurate information from the government, which would reduce the spread of propaganda messages and maintain public trust in the government.
3. Democratic states should be very careful in the fight against infodemia, so as not to violate human rights, since experience has shown that it is necessary to fight against it because disinformation causes the breakdown of democratic processes and threatens the development of the country.
4. The pandemic showed us how important it is to reorganize public services remotely in the modern globalized world. Even though Georgia immediately responded to the challenges of the pandemic, there were still gaps in this regard, even in the education system. Both the teachers and students faced difficulties in the online studying and working process, which hindered the effectiveness of the educational process. It is important for the state to develop the right strategy, especially in crises, since getting an education is a fundamental human right, and the protection of this right is the main condition for the development of a social state.
5. States are obliged to present long-term programs where priorities will be allocated to increase the sustainability of the country's socio-economic systems.

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# 6

## THE SOCIAL ASPECT OF THE CIRCULAR ECONOMY

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### ***Abstract***

*Ecological and social crises have increased quite a lot. The term "circular economy" (CE) is very current. It's focused on mitigating or eliminating waste harming the environment. CE encompasses different practices such as eco-design, the use of renewable energy, recycling, reducing, and reusing. Since it's something new, there is no specific method or indicator for measuring the effectiveness with which society is contributing to changing from a linear to a circular approach to the economy. This research presents a systematic literature review of how many social aspects are studied and integrated into CE. It summarizes the literature on social aspects' role in CE, theories of evaluating the social impact of CE, and a study of social factors within CE.*

*Keywords: circular economy; social aspects; sustainability.*

### **1. Introduction**

Lately, the research interest in understanding Circular Economy (CE) has increased, and currently, we can say that CE is an integral part of businesses or government policies on moving forward sustainability (Prieto-Sandoval, Jaca and Ormazabal, 2018).

CE was a response to traditional linear economies which were unsustainable and consisted of production, consumption, and disposing system (Geng and Doberstein, 2010). Certainly, the CE paradigm includes a broader scope covering business transformations, increasing renewable and recycled resources, minimizing or eliminating the use of dangerous substances, new methods for enabling sustainable production and consumption, etc. (Suárez-Eiroa, Fernández and Méndez, 2021). The

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sustainability paradigm requires planning of three sustainability aspects: economic, social, and environmental (Tomić and Schneider, 2020).

It is observed that CE has a positive impact on the economic aspects (Hanumante, Shastri and Hoadley, 2019,) as the main purpose has to harmonize the economic and environmental objectives (Arroyabe, Arranz, Schumann and Arroyabe, 2021).

However, while many studies and research are focused on the relationship between CE and business there is still discussion on the role of CE under the sustainable development paradigm (Suárez-Eiroa, Fernández and Méndez, 2021). Many authors have stated that CE is concentrated on the economic value of products, occulting the social aspect (SA). So there is little attention given to the societal impacts of CE strategies, and, in some cases, no reflection at all (Padilla-Rivera, Telles do Carmo, Arcese and Merveille, 2021). Since the focus thus far remains on economic-environment perspectives, some authors indicate the lack of approaches in research related to social issues (Homrich, Galvão, Abadia and Carvalho, 2018). Furthermore, others (Korhonen, Honkasalo and Seppälä, 2018), highlight participative democratic judgments as the main issues to be included as a social objective in CE. The practice of social innovation is hectic (Gillabel, Manshoven and Grossi, 2021).

Still, there isn't something specifically showing the relation of CE to society. Through a systematic literature review, this paper aims to present a summary of the overall SA of CE. The paper shows how much the social aspects are studied, analyzed, and treated within CE, and which are the main social elements addressed within CE to have an overview for further specification of extending studies and also in other social elements less studied.

## **2. Research Methodology**

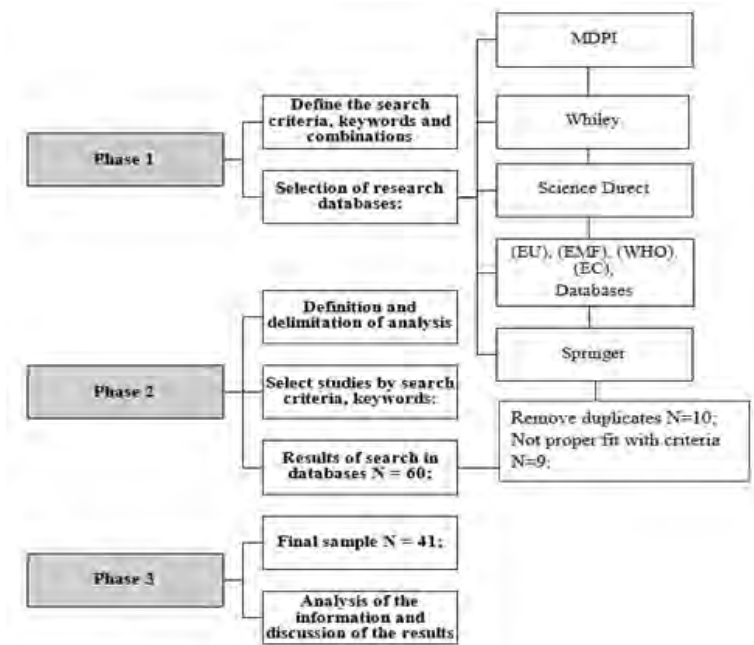
This review was conducted following general systematic review principles (Tranfield, Denyer and Smart, 2003) based on publications on academic databases such as Springer, Amsterdam, Basel, Switzerland and Wiley, The Netherlands, MDPI Hoboken, and published articles mainly from 2011 to 2021. Reports with statistical data from the European Union (EU), Ellen Macarthur Foundation (EMF), World Health Organization (WHO), and European Commission (EC) were also the subject of this paper. The literature review approach used here was that one suggested by (Zacho and Mosgaard, 2016). Based on choosing key notions for analysis, all the collected material is summarized to obtain results (De Pascale, Arbolino, Szopik-Deczyńska, Limosani and Ioppolo, 2021).

As a first step, the search is limited to only being published in the English language when we identify 41 studies, eliminating duplicates. In phase 2, we chose the next criteria for the studies to be taken into review for this work:

- The articles must consider CE or its related concepts (green economy, reuse, recycle, sustainability, waste, social circularity, employment in CE, industrial ecology, energy saving, bioeconomy, community in CE, health, and security within CE), and
- The articles must deal, assess, and suggest with, either individually or composite, at least one social factor/element/topic/parameter/significance.

These two criteria were applied to all the papers and studies. Those that were following these criteria were kept for analysis in this systematic review. The process of the literature review is presented below in Figure 1

*Figure1: Research Methodology Overview  
 The Process of the Literature Review*



Source: Process description by author.

## 2.1 Attributes of the Included Studies

From the final sample for analysis, it can be said that SA interest in CE is increasing since 2015 ahead. The incorporation of SA within circular performance review was also highlighted in the EMF report 2015 (Ellen MacArthur Foundation, 2015). Three main journals explaining more about the SA within CE are the Journal of Cleaner Production, Sustainability, and Resources, Conservation and Recycling. For empirical data, we've used data from (the EU), (EMF), (WHO), (EC), and other relevant sources when necessary. The main focus on analyzing the application of the CE was Europe, particularly EU states. Most of the studies were focused on European countries.

Indicators of measuring economy currently are classified into three levels: macro (global, national, regional, city), mezzo (industrial symbiosis, eco-industrial parks), and micro (single firm, product) (Kristensen and Mosgaard, 2020). The level of the analysis presented in this review is more oriented at a macro level: society level (Egenolf and Bringezu, 2019), municipality level (Malinauskaite, et al., 2017), regional level (Pitkänen, et al., 2016), followed by micro-level customers (Koide, Murakami and Nansai, 2022), (Sun, Spekkink, Cuppen and Korevaar, 2017), products (Laurenti, Martin and Stenmarck, 2018), and mezzo level.

Papers reviewed according to their categorization of industry in which CE is implemented, almost half of them are to distinguish a sector of activity. The most important sectors are waste management, and the manufacturing sector is paper and metal. In other industries, the technological field is the important one, followed by the food industry, energy generation, textile, and communication. The limitation of this research is that it does not aim to develop a methodology or index, as this will be subject to the expansion of this research on this topic in the future.

## 3. Systematic Literature Review

There is a three-aspect approach in the overview of sustainability of a business, that of the economic, environmental, and social one (Elkington and Rowlands, 1999). The importance of these three aspects depends on the priorities and operation of companies (Carter and Rogers, 2008), especially when we talk about job satisfaction, community, or stakeholders (Presley, Meade and Sarkis, 2007).

(Marcus and Colbert, 2010) stays that social and environmental aspects are affected by business activities giving either a positive or negative impact on society, and in sustainability social aspects seem to be more challenging to assess and measure compared with a linear one (Presley, Meade and Sarkis,

2007). Life cycle assessment (LCA) or socio-organizational LCA (SOLCA) as the main commonly used tools in assessing social aspects are mainly focused on specific social issues and do not include all social issues (Kühnen and Hahn, 2017). The treatment of the social aspect overall is omitted mostly in many frameworks used to assess the social aspects within circularity and sustainability (Corona, Shen, Reike, Rosales Carreón and Worrell, 2019) also there is a diminished social aspect in CE literature (Geissdoerfer, Savaget, Bocken and Hultink, 2017). In the CE widely the social aspect has not been sufficiently examined (Kirchherr, et al., 2018), also in the framework of industrial ecology, the social aspect is treated a little (Hoffman, 2003).

The literature reviewed for social aspects in CE (Padilla-Rivera, Telles do Carmo, Arcese and Merveille, 2021) pointed to employment and health as the main treated social aspects. (Inigo and Blok, 2019) suggest more involvement of stakeholders in CE, and more incorporation of overall social aspects within CE (Brueel, Kronenberg, Troussier and Guillaume, 2018). This paper aims to support the involvement of all social aspects in the CE and to emphasize the study and more treatment of all social aspects besides those treated more in the literature reviewed overall.

## **4. Results and Discussions**

### **4.1 The Social Aspect (SA) within the Circular Economy (CE)**

The environmental aspect is the dominant focus in CE, whereas the SA such as work, community, human rights, well-being, health and security, and other social issues are less taken into account and less studied in the aspect of CE impact (Mies and Gold, 2021). Achieving a sustainable option for the current economic system is a crucial integration of the social sustainability aspect as one of the three Sustainability characteristics (Elkington and Rowlands, 1999). The social aspect in CE is getting more attention year by year, we are going further with the discussion on this aspect.

### **4.2 Social Aspects: Categorization**

Sustainability characteristics are categorized into three aspects, economic, environmental, and social in the literature. Regarding the implementation of a SA for sustainability there isn't much clearly defined or settled, yet (Sun, Spekkink, Cuppen and Korevaar, 2017). The review analysis is performed by taking into consideration a base of analysis of the sustainability categories on SA determined by EMF (Dempsey, Bramley,

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Power and Brown, 2011), (Ellen MacArthur Foundation, 2015). An overall summary of the SA categories related to sustainable development and circularity is presented in Table 1 below. In the literature review, we could not find a general agreement for classifying social issues in CE so we have used Social Life Cycle Assessment (SLCA) methodology. Assessing a range of potential social impacts in the life cycle of a product on stakeholders is the focus of SLCA. Stakeholders are considered those on whom the life cycle of a product is expected to have an impact (UNEP, 2009).

*Table 1: Stakeholder Categories and Subcategories*

Social Dimension	Worker	Consumer	Local community	Society	Value chain actors not including consumers
	Freedom of Association and Collective			Public commitments to sustainability	
1 Bargaining		9 Health & Safety	13 Access to material resources	22 issues	27 Fair competition
		Feedback Mechanism	Access to immaterial	Contribution to economic	Promoting social
2 Child Labour		10 Consumer	14 resources	23 development	28 responsibility
		Privacy	Delocalization and	Prevention & mitigation of	Supplier
3 Fair Salary		11 Transparency	15 Migration	24 armed conflicts	29 relationships
		End of life		Technology	Respect of intellectual property
Stakeholder categories	4 Working Hours	12 responsibility	16 Cultural Heritage	25 development	30 rights
			Safe & healthy		
5 Forced Labour			17 living conditions	26 Corruption	
6 Equal opportunities/Discrimination			Respect of indigenous rights		
			Community engagement		
7 Health and Safety			19		
Social Benefits/Social					
8 Security			20 Local employment		
			Secure living		
			21 conditions		

Source: UNEP, 2009.

**4.3 Employment**

There is no evidence-based argument on the intended and required global social effects, such as changes in employment, of the European Union’s transition towards the Circular Economy (CE). However, in a circular economy, employment will bring benefits to the environment. But it should be worth it for workers too. For example, exposure to dangerous substances raises worker safety issues. This is since many works in Europe related to waste management and recycling are sometimes low paying. (Repp, Hekkert and Kirchherr, 2021).

Contract labor is becoming more prevalent in several CE sectors, both in developed and developing nations, such as the construction sector (Circle Economy, 2020). Sometimes these new jobs created might be more general

within the framework for the CE but may also not be sustainable for workers. This is because for example the gender aspect within the circular economy is important and men might benefit from higher wages or be disproportionately represented in certain occupations (Repp, Hekkert and Kirchherr, 2021).

We should also mention the impact of digital technologies used for circular products, in some less developed countries people in different regions within these countries don't have much knowledge of using technologies. Or the application of technology also can result in reducing some specific jobs, and this process is known as technological unemployment. This process can be an indicator of the unsustainability of workers. However, there is a positive impact too in creating job opportunities elsewhere (Larsson and Teigland, 2020). Green promotion and encouraging the adoption of greener technologies among different stakeholders are also important incentives in the sense of employment in the CE (Pociovălișteanu, Novo-Corti, Ionela Aceleanu, Șerban and Grecu, 2015).

Creating awareness of the need for a CE and environmental issues is another necessity for reaching a CE (European Commission, 2018). Both government and industry should attempt to promote employment in circular economies, to support employment through methods and incentives. It is also important to take into consideration aspects of how workers accept the conditions of employment that are required in CE.

#### **4.4 Consumer Propensity**

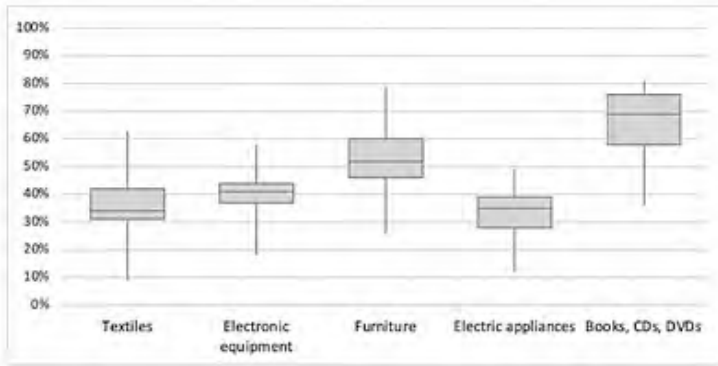
Consumers' propensity as part of CE actualization is still not studied much. The transition from linear to circular is dependent on consumer choices, the quality and quantity of products they buy, their vulnerability to new business methods, and the way of bargaining with used products (Koszewska, 2019). Because they have a critical role in the CE it's important to understand how they accept circular products. Studies have shown that most consumers want to consume environmentally sustainable products, but regular purchases in real incorporation are less apparent (Cronin Jr, Smith, Gleim, Ramirez and Martinez, 2011).

Research has shown that many consumers have shown the tendency to recognize environmentally sustainable products as lacking important product characteristics (Luchs, Naylor, Irwin and Raghunathan, 2010), or see these products as having poor quality, implementation, or not safe (Wang, Hazen and Mollenkopf, 2018).



Testing variability across EU28 countries about willingness to buy some second-hand products (2015) in different categories was found as presented in Figure 2 below (European Union, 2021):

*Figure 2: Willingness to Buy Second-hand Products across EU28 Countries (2015)*



*Source: EU psychosocial barriers to re-use of different groups and products. 2021 EU-report.*

The absence of consumer interest and attention is the main limitation in the transition from linear to circular business models and strategies (Kirchherr, et al., 2018). Therefore, it's very necessary to increase the awareness and understanding of circular consumption processes, characteristics, products, and attributes. It's important also to emphasize that transition to CE has implications both positively, e.g., reduction of air pollution (Sacirovic, Ketin and Vignjevic, 2018), and negatively, e.g., if dangerous chemicals are not properly addressed to minimize health risks and to properly address the end life of a product (Azevedo and Matias, 2016). The CE can also have a positive impact in offering cost savings to public health and improving health care services and quality of life. The framework of assessment of human health and welfare implications from the implementation of CE models presented in the report of World Health Organization 2018 (Calvo-Porrall and Lévy-Mangin, 2020) was used as the base of focus of many studies researched in this paper. Till now there isn't a specific framework to use, and there aren't many studies on the connection of health to the CE.

#### 4.5 Local Community

From the research analysis, we can see that together with CE it should be taking into consideration the effects of society's participation. More

significant participation within and by local communities creates useful benefits looking from the community perspective (Korhonen, Giurca, Brockhaus and Toppinen, 2018). Community acceptance is another issue related to projects of CE where stakeholders, especially locals and regional authorities, are involved. Through research, we've seen a need of developing a framework for understanding public perceptions affecting CE strategies concerning local communities.

#### 4.6 Society

In reviewing research, we found that social aspects are underrepresented in the CE. Reducing energy and material is the primary objective (Wijkman and Skånberg), however, these assertions are rarely confirmed with empirical evidence (Millar, McLaughlin and Börger, 2019). Social issues are social equity, justice, interest, power relations in value chains, positions and rights of consumers, users, citizens, labor exploitation, and the distribution of resources (Velenturf and Purnell, 2021). Social equity is one of the most frequent ones reached in research because is more frequent in improving human rights and social justice (Naess, 2000). Many studies refer to different issues on promoting and measuring social equity by CE. For Example, the role in social justice is specified by (Geng and Doberstein, 2010). There were no found studies supporting these statements in measuring CE. There were other proposed indicators of social equity by many studies such as Gross Domestic Product (GDP) the most discussed one, but most of them are not empirically supported. However, incorporating social equity into CE requires additional work.

#### 4.7 Theoretical Approaches within CE

Our results in this paper found that most of the reviewed literature uses quantitative related-social methodologies and it is a trend arising from a theoretical base to a quantitative framework. This makes this aspect of the economy an interesting part to study as in general social impacts more often are presented in qualitative results and they are not easy to be quantified (Kühnen and Hahn, 2017). Non-empirical studies have contributed 20% to this paper as we can mention articles relating to socio-technical transition theory (Allam and Jones, 2018), governance theory (Dietz, Börner, Förster and Braun, 2018), social embeddedness, and social capital (Ashton and Bain, 2012). This review is more concentrated on the Stakeholder theory in terms of social performance measurement and will discuss further stakeholders related to this theory. Table 2 present summarized some theories to give a direction for future research on the social aspect of CE.

*Table 2: Type of Theories Used to Study Social Aspects within CE*

Type of Theory	Purpose of Theory in the aspect of Social Performance Measurement
Stakeholder theory	This theory is viewed as a mechanism of measuring social dimensions and quality within the CE context.
Network theory	Helps to understand the network role in the social dimension within CE in the decision-making process.
Social and solidarity economy theory	Helps to have a clear idea of the role of the social aspects in CE activities.
The Institutional theory	Focuses on the impact of institutional issues on social performance measurement.
Socio-technical transition theory	This theory promotes important changes in the socio-technical dimension within CE.
Gidden's structuration theory	Helps to understand the relations between social structures and human action in improving material resource management and the impact of circular economy initiatives.
The resource-based view of the firm	Is used to analyze the accomplishment of benefits of sustainable competition. This is done by measuring the competencies and capabilities of firms in social performance.
Socio-technical transition theory	This theory promotes important changes in the socio-technical dimension within CE.
Social embeddedness and capital theory	It is focused on human work in reproduction and recycling processes with the main focus on improving the quality and variety of human work.

*Source: Authors Summary.*

#### 4.8 International Reports on Circular Economy and Social Aspects

Throughout this review, despite scientific papers, analyzed, there were also reviewed reports from important international organizations and institutions in the circular economy and specifically in the social aspect within CE when possible. Because at the macroeconomic level there was no specific summary indicator for the circularity of economies, Eurostat created the 'circular material use rate' as a new indicator for the EU monitoring framework for the circular economy. It's also called the circularity rate and measures the contribution of recycled materials toward the widespread use of materials.

The Netherlands (30.9 %) has the highest circularity rate in 2020. Therefore, our review found more research done in the Netherlands regarding CE, from a social aspect. Belgium (23.0 %) and France (22.2 %) come after. Romania (1.3 %) registered the lowest rate, followed by Ireland (1.8 %) and Portugal (2.2 %).

Discrepancies in the circularity rate between these states members of the EU are not simply because of the recycling quantity. They are because of different structural aspects in national economies that we can see as an example: choosing products presented in Figure 2 above.

Table 3: Circularity rate for the EU and its Member States between 2011 and 2020

	TIME 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
European Union - 27 countries (from 2020)	10.3	11.1	11.3	11.2	11.3	11.5	11.5	11.7	12	12.8
European Union - 28 countries (2013-2020)	10.8	11.5	11.7	11.6	11.8	12	12.1	12.2	12.5	-
Belgium	14	16.9	16.8	17.6	17.7	17.6	18.5	19.9	23.5	23
Bulgaria	1.8	1.9	2.5	2.7	3.1	4.4	3.5	2.5	2.3	2.6
Czechia	5.4	6.3	6.7	6.8	6.9	7.5	9.1	10.5	11.3	13.4
Denmark	7	6.4	7.7	9	8.3	8	7.9	8.1	7.6	7.7
Germany (until 1990 former territory of t	10.8	11.2	11.3	11.3	12	12.2	11.8	12.4	12.9	13.4
Estonia	14.2	19.1	14.6	10.9	11.3	11.6	12.4	13.5	15.6	17.3
Ireland	2.1	1.8	1.7	2	1.9	1.7	1.7	1.6	1.6	1.8
Greece	2.2	1.9	1.8	1.4	1.9	2.3	2.8	3.3	4.1	5.4
Spain	9.8	9.8	8.9	7.7	7.5	8.2	8.8	9	9.6	11.2
France	16.8	16.9	17.3	17.8	18.7	19.4	18.8	19.7	20	22.2
Croatia	2.4	3.6	3.9	4.8	4.6	4.6	5.2	5	5.2	5.1
Italy	11.6	13.9	16	16.1	17.2	17.8	18.4	18.8	19.5	21.6
Cyprus	1.9	2	2.4	2.2	2.4	2.4	2.4	2.8	2.9	3.4
Latvia	2.9	1.3	3.8	5.3	5.3	6.5	5.4	4.7	4.3	4.2
Lithuania	3.6	3.8	3.1	3.7	4.1	4.6	4.5	4.3	3.9	4.4
Luxembourg	20.7	18.5	15.4	11.3	9.7	7.1	10.6	10.8	10.5	13.6
Hungary	5.4	6.1	6.2	5.4	5.8	6.5	6.9	7	7.3	8.7
Malta	4.5	3.9	6.3	6.4	4.6	4.2	6.5	8.3	7.7	7.9
Netherlands	25	26.5	27.1	26.6	25.8	28.5	29.7	28.9	30	30.9
Austria	6.8	7.5	8.7	9.6	10.7	11.2	11.4	11.1	11.5	12
Poland	9.2	10.6	11.8	12.6	11.6	10.2	9.9	9.8	10.3	9.9
Portugal	1.7	2	2.5	2.4	2.1	2.1	2	2.2	2.3	2.2
Romania	2.5	2.6	2.5	2.1	1.7	1.7	1.7	1.5	1.3	1.3
Slovenia	7.6	9.3	9.3	8.5	8.6	8.7	9.8	10	11.4	12.3
Slovakia	4.8	4.1	4.6	4.8	5.1	5.3	5	4.9	6.4	6.4
Finland	14	15.3	10.1	7.3	6.4	5.3	5.6	5.9	6.3	6.2
Sweden	7.6	8.2	7.2	6.4	6.7	6.8	6.7	6.6	6.5	7.1
United Kingdom	13.8	14	14	14	15	15.7	15.7	16	16.4	-

Source dataset: Eurostat.

## 5. Conclusions and Final Remarks

From this literature review, we can say that the existing CE framework isn't so clear and studied much in promoting social well-being, taking into consideration all positive and negative effects of CE in the aspect of social aspect as one of the important areas in the scope of CE and sustainable development. There is uncertainty about whether it is a more sustainable model than a linear one or not. Furthermore, we can say that stakeholders are increasing their will to get knowledge and being aware of the social aspect of CE to achieve sustainable development. Also, we have concluded that in the transition toward a circular economy there is an increment of attention on the social aspect, and this is shown also by data reviewed in the literature.

Regarding the aim of the paper, we can say that the main social aspects studied, analyzed, and discussed within CE in literature are employee satisfaction, health, security, and community involvement, meanwhile, a lot of other social aspects remain less studied and analyzed such as those associated with food or gender. In this literature review, work, consumers, local community, and society are the most frequented socio-economic elements related to CE. There is no general agreement for assessing social aspects within CE. The main commonly used tools in assessing social aspects are Life cycle assessment (LCA) or socio organizational LCA (SOLCA), these tools are focused on specific social issues and do not

include in the assessment of overall social issues. So there is no specific and appropriate framework available that should be used to take into consideration all social issues.

Social issues in CE usually, or better say most of the time are very specifically treated. Topics for research are selected based on the scope of interest, stakeholders involved in CE under specific considerations, or availability of data for specific elements. Studies usually are very specific and are focused on a specific social issue, usually, the most frequented one was employment. In all paper's reviews, we can say that many social issues are related to the circular economy, and the impact both positively and negatively is based on the affected stakeholder groups. However, there is still a need to study, analyze, and define more the overall social aspect within CE and other aspects.

This review seeks to support future CE studies by providing a general overview of issues that can be taken into account when measuring social impact in CE. It also tries to promote the need of developing a specific framework to analyze overall elements of social aspects and evaluate their impact on CE. Furthermore, shows that every stakeholder involved in the social aspect is important within CE. Even though we found these main issues were the most frequent issues treated in our literature review, there is still a need for future studies of other social indicators and social issues within CE in improving well-being in society.

We found the necessity of having more real-world case analyses to promote the growth of circularity as a process. Especially more case analysis of social impact in CE as there wasn't much presented. It is also important to follow up on the transition process by comparing the outcomes of the transition from linear to circular economy years after the implementation of the process.

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# 7

## THE ECONOMIC POLICIES PURSUED IN TÜRKİYE IN THE PERIOD 2018-2022: AN EVALUATION IN TERMS OF HETERODOX STABILIZATION PROGRAMS

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### ***Abstract***

*While the Covid-19 epidemic poses a serious health threat to the whole world, it has also significantly affected the economies of the countries. Turkey was faced with many economic difficulties, especially current account deficit, unemployment, and inflation, in the period of March 2020, when Covid-19 was accepted as a pandemic. The measures taken to prevent the spread of the epidemic in the country caused these problems to deepen and this situation led the government to adopt a new economic model. In this new model, based on the “interest is the cause, inflation is the effect” motto, low interest and high-exchange rate policy has been started to be pursued. Because traditional contractionary monetary and fiscal policies haven’t been used, the Ministry of Treasury and Finance has labeled these policies as heterodox. The heterodox stabilization programs are programs which combine monetary and fiscal policies with incomes policy. The applications in 1980s in Latin American countries and Israel are the best-known examples of this kind of programs. In these countries, fixed exchange rate regime and wage and price controls have been used and inertial inflation has been tried to be tackled. But the policies applied in Türkiye at the present term are different from the heterodox examples in theory and practice. An important factor of heterodox policies, the incomes policy has rarely been appealed to. Rather than preferring policies for bringing down inflation, the policies which increase domestic production and exportation have been applied.*

*Key Words: COVID-19, Türkiye’s Economic Policies, Orthodox and Heterodox Policies*

*JEL Codes: B50, E02, E52, E62*

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## **1. Introduction**

Problems like quarantine measures, the halt of production, dismissals and wind ups of companies show that the consequences of the pandemic show themselves as supply shocks. Keynesian policies, which attribute these kinds of depression problems to the insufficiency in demand, suggest expansionary fiscal policies for the mentioned depression problems. But for solving these kinds of pandemics, which have great global effects, and the economic problems they cause, more specific precautions are needed.

The most distinct effects of the pandemic on Türkiye have been high inflation and unemployment rates. While the government was trying to get rid of the harmful effects of the crisis through expansionary fiscal policies and tight money policies, they have given up on the tight money policy at the beginning of 2021 and abandoned orthodox policies. After that, the Minister of Finance gave a speech to the public, saying that they have abandoned orthodox policies and that the government will adopt heterodox policies to tackle economic problems. However, no programs have been announced on what kind of a strategy will be set up in tackling inflation and what the extent of the heterodox policies will be. In this study, the economic policies pursued after the pandemic have been examined. In this context, in the second and third chapters, the attributes of orthodox and heterodox policies and country experiences have been included. In the fourth chapter of the study, the economic policies adopted in Türkiye after COVID-19 have been discussed. In the extent of that chapter, the economic problems Türkiye has experienced before 2018 and the strategies set up to solve these problems after 2018 have been included. Also, the heterodox properties of the economic policies adopted after 2018 have been included in this chapter. In the fifth chapter is conclusion.

## **2. Orthodox Stabilization Policies**

The stabilization programs used in tackling inflation can be classified as long-term gradual programs of short-term shock policies as well as orthodox or heterodox policies. The main difference between orthodox and heterodox policies stems up to the discussion between the monetarists and structuralist economy. According to the orthodox monetarist approach that assumes the socio-economic structures as elastic, the source of inflation is the expansionary monetary and fiscal policies (Mann and Pastor, 1989). Because of this, orthodox programs place great importance in tight money and fiscal policies to decrease inflation rates. The heterodox structuralist approach emphasizes the inelasticity of economic, politic and social structures in underdeveloped countries (Mann & Pastor, 1989).

Orthodox stabilization programs are programs generally supported by the International Money Fund (IMF). The typical stabilization package to tackle inflation suggested by IMF includes some basic precautions. Reducing the budgeted deficiencies, devaluating currency to improve external balance, decrease monetization, recreasing real wages and the liberalization of the market are among these precautions (Mann and Pastor, 1989). But these policies which are called as austerity policies bring along many economic burdens such as recession, increase in unemployment and real wage decrease. Because of that, it can be said that the orthodox stabilization policies backed up by the IMF are not so supported by society and these kinds of programs are not preferred much by populist politicians. Orthodox stabilization programs, aside from the cost they burden the society with, draw many theoretic criticisms. These criticisms can be summed up as follows:

- Countries generally approach IMF for debt claims in order to finance balance of payments deficits. The reason why tackling inflation is at the center of IMF programs is because of the relationship between budget deficit and current deficit. However, the relationship between current deficit and budget deficit may not be strong. And because of that, it is possible for a country to achieve external objectives and fail in internal objectives. (Dornbusch & Simonsen, 1987).
- The basic logic of the stabilization programs supported by IMF is the belief that the budget deficits are causing inflation. But the mechanism can process the other way around and the budget deficits can increase because of inflation. One of the important reasons for the increase in budget deficits is the Olivera-Tanzi effect. The effect is much more profound in high inflation rates such as hyperinflation. Because of that, decreasing inflation rates increases real tax collection and creates a decreasing effect on budget deficits (Olivera, 1967; Tanzi, 1977).
- Contrary to what is assumed, the pressure of excess demand may not be the only determinant of inflation. Inflationary expectation (inertial inflation) can play an important role in the realization of inflation in countries with inflation that is high and chronic. The behaviors of individuals are consistent with their predictions on inflation and these behaviors cause a rise in prices and thus the inflation of yesterday determines today's inflation. In this situation, the reaction of market actors stay laggard against the policies that decrease total demand and also the compliance costs also increase (Blejer & Cheasty, 1988).

- Ignoring the differences of orthodox IMF policies in the politic, economic and social structures of underdeveloped countries also creates problems. Liberalization suggestions may not be suitable for the long-term growth development objectives of these countries. Mann and Pastor (1989) claim that an oligopolistic market structure is evident in underdeveloped countries. According to this, the costs (including interest costs) and prices are determined by predetermined rules. In restricted sectors, wages are indexed against inflation. Also, there are struggles on who will have how much share from the national income. In these countries the export volume does not increase immediately after devaluation. It is mostly steady because of the need for import, capital assets and intermediate goods. The finance sector is underdeveloped.

### **3. Heterodox Stabilization Policies**

Heterodox stabilization programs can be generally defined as programs which combine monetary and fiscal policies with income policies. Heterodox stabilization programs came out with the applications in Latin American countries and Israel. There are some main reasons in these countries preferring heterodox stabilization programs. First, these countries which have a chronic inflation problem, inflationary expectation causes inflation, in other words, the reason behind inflation is inertia. Inertial inflation means that today's inflation is approximately equal to yesterday's inflation. Inflation is not caused by the amount of money being more than the real output level or supply shocks (such as the rise in the price of petrol or agricultural products), but from yesterday's inflation (Dornbusch & Simonsen, 1987). These countries thought that the inflationary expectation can be cleared off with shock stabilization policies that include incomes policy. The second reason is that the political applicability of the heterodox stabilization programs is elevated. The policy-makers in these countries wanted to rapidly downgrade inflation without creating a reduction in economic growth rate or employment rate. Therefore, they preferred shock incomes policy instead of tight money and fiscal policies which are applied gradually and cause economic recession. At the beginning, the costs of reducing inflation with shock incomes policy are low. Because of that, the policies are supported to a great extent by the public. Reasons such as relieving governments in the short-term with by reversing the Olivera-Tanzi effect of heterodox policies and the improvement in budget balance providing reliability to the fiscal balance makes the applicability of these programs easier (Kiguel & Liviatan, 1992; Dornbusch & Simonsen, 1987).

### 3.1. The Features of Heterodox Stabilization Programs

As the heterodox stabilization programs have been designed to achieve different goals in countries which have different structural and political restrictions, it is not possible to speak of a typical heterodox program. Blejer and Cheasty (1988) categorize some features of heterodox stabilization programs as preparatory reforms, expectation adjusting policies and demand management policies.

*Preparatory Reforms:* The first of preparatory reforms is making up and down equalizing adjustments in base prices (prices of goods, wages, exchange rates, interest rates etc.). The reason behind these adjustments is to get rid of the available imbalances before the wage and price controls (Blejer & Cheasty, 1988). Before the program, monetary reforms such as creating a new currency, making the central bank independent and reforms on banking and financial institutions (Dornbusch & Simonsen, 1987).

*Expectation Adjusting Policies:* This kind of policies show similarity to orthodox stabilization programs which are applied for contracting demand. Such policies are made up of tight money and fiscal policies that reduce budget deficiency and contract credit volume and it is expected for these policies to affect the economy gradually in the second stage of the stabilization program (Blejer & Cheasty, 1988).

### 3.2. Critiques on Heterodox Stabilization Programs

Heterodox stabilization programs are essentially made up of two stages. At the first stage of the program, in order to lower inflation fast and soften part of the unemployment costs, wage and price controls are used as temporary and shock instruments. In the second stage, policies similar to orthodox stability programs are applied. In this stage, it is needed to consolidate the stabilization progress and elasticize prices (Kiguel & Liviatan (1989; 1992). The most important critiques on heterodox programs are generally on the problems arising in the second stage of the program. Using exchange rate as a nominal anchor causes the local currency to rise in value. An overvalued local currency can harm the export sector. To avoid prevent capital flight, the appealing rate of return of local assets should be sustained and for this reason interest rates can stay high (Kiguel & Liviatan, 1992).

Doubts will arise on a government that refuses the cost of reducing inflation with an orthodox policy to whether it can implement these policies later on and this may damage the government's credibility (Kiguel & Liviatan, 1992). Also, because of the temporary success provided by the incomes policy, governments can forget the reality of sustaining price



stability with demand discipline. They can continue the controls to sustain their popularity (Dornbusch & Simonsen, 1987; Mann & Pastor, 1989).

Although incomes policy, which is basically used to tackle inertial inflation, creates positive effects at the beginning, the costs it will create in the long run can exceed the benefits it created at the beginning. When wage and prices are not frozen at a valid balance point, there is a chance that dead weight loss and inequalities may arise in the economy. Governments decide at which balance point wage and prices will be frozen. However, governments may not designate this balance point better than private sector (Dornbusch & Simonsen, 1987). The controls may create an effect that disrupts resource allocation. If structural reforms are not made before the program, price controls may worsen the imbalances in some markets. Freezing the prices in an imbalanced point may jeopardize the sustainability of the controls by increasing the pressure on balance. It can also create quantity adjustments and cause shortage and black market (Blejer & Cheatsy, 1988; Dornbusch & Simonsen, 1987). Deciding on which balance point prices should be frozen needs more complex adjustments to be made. When a stability precaution has been taken, some wage earners will have fresh contracts and others will not have any contracts. Therefore, while a sector's real wages are on its peak, another sector's real wages may be cyclically low. There will be serious imparities between real wages (Mann and Pastor, 1989; Dornbusch & Simonsen, 1987). This situation will create a sense of injustice and will harm the sustainability of the stability program (Dornbusch & Simonsen, 1987). Complex rules will be needed to prevent inequalities in real wages and this will mostly cause wrong decisions to be made (Kiguel & Liviatan, 1992).

Programs, that show that the controls can stop inflation effectively in the short-run, can create a basis for the recurring usage of income policies. However, when the private sector started to foresee this policy, firms can start to inflate prices in order to prevent the harm that freezing prices can cause to the profits (Kiguel & Liviatan, 1992).

### **3.3. Examples of Countries Which Apply the Heterodox Stabilization Program**

There are studies in the literature which define policies that include wage and price controls as heterodox stabilization policies. However, there are significant differences between programs in terms of supporting policies used for increasing the extent, application and length of controls and make programs more effective (Kiguel & Liviatan, 1989). Therefore, there is no total agreement in which programs are heterodox. Bruno et al. (1988), Dornbusch & Simonsen (1987) consider the stabilization programs

applied in Israel (1985 program), Argentina (Austral Plan) and in Brazil (Cruzado Plan) in 1980s as heterodox. Pastor and Wise (1992) also consider the program in Peru (1985 program) as heterodox. Kiguel and Liviatan (1992) consider only the programs in Israel (1985 program) and Mexico (Mexican Pacto de Solidaridad between 1987-1988) as heterodox.

### 3.3.1. Israel

In 1985, Israel has implemented a stabilization program which combined orthodox stabilization policies and heterodox incomes policies. The first six months of the orthodox part of the program was the rapid decline of the operational deficit and tight money policies. The pegging of exchange rates and wage and price controls have been the heterodox elements of the program (Liviatan & Banco Mundial, 1988).

The main features of the programs are thus (Bruno, 1986):

- It has been tried to lower the budget deficits so that the share of the public sector debt stock in the GDP can be reduced gradually. With the depreciation of subventions and a rise in the direct and indirect taxes, the budget share has been lowered. The second most important factor of downscaling the public sector was the decision of lowering labor force by 3%.
- The local currency (shekel), after a devaluation of 6% has been devaluated again by 18,8%. Special subventions on export-oriented shekel credits and protecting the profitability of exports have been lowered.
- Nominal monetary anchors have been adopted in order to ensure stability in exchange rates and prices.
- Incomes policy has been implemented via wage and price freezes. An agreement has been signed between the workers and employers to compensate the reduction in the wages of the workers.

The Israeli stabilization effort managed to reduce inflation, almost instantaneously, from several hundred percent per annum to about 20% with only a minor decrease in economic activity. It also reduced temporarily domestic absorption and the real wage rate, contributing further to the balance of payments improvements that started in late 1984. The budgetary deficit decreased. But the program did not permanently decrease the deficit in the balance of payments, nor did it revive the stagnating growth rate of the Israeli economy (Cukierman, 1988, p. 84).

### **3.3.2. Argentina**

Argentina, which has high inflation problems since 1975, has implemented the Austral Plan in 1985. The plan aimed to create a balance between monetary and austerity policies and policies which include the control of wage, price and exchange rates. The main features of the program are thus (Dornbusch & Simonsen, 1987):

- With the approval of the program, the government has increased the prices of the public sector, devaluated exchange rates and applied importation taxes and exportation tariffs.
- The wages have been frozen and fixed to US dollar. The freezing of the wages has resulted in wage cuts.
- In order to adjust agreements unpaid to end inflation immediately and unexpectedly, a timeline has been prepared.
- A new currency (Austral) had been introduced. It has been allowed to continue the use of the old currency and get into circulation equally.
- The program has been approved by the IMF and by providing the financing of a good part of the overdue debts and current debt services with the new currency, the debts have been extended.

The plan was initially successful. Inflation fell from 30.5% in June to 6.2% in July, and 3.1% in August. During the period of price controls, neither shortages, nor black markets appeared. A significant reduction in the budget deficit was achieved as a result of real revenue increases in tax collection at the lower inflation rate, some reduction in government expenditures, new taxes, and tighter controls on tax evasion. However Peronist-run provinces issued money, in the form of bonds, to pay for wages of public employees and other current expenditures. Wage increases were granted in the private sector to compensate workers for the lost purchasing power. During the first quarter of 1986 the budget deficit rose. In April 1986, the price freeze was replaced with a system of "administered" prices, nominal wages could be adjusted quarterly within a preset band, public sector tariffs were raised by 6%, and the Austral was devaluated by 3.6%. A policy of periodic mini-devaluations was introduced and indexation reappeared in nominal contracts. Price controls were lifted, the inflation rate increased steadily (Ruge-Murcia, 1997).

### **3.3.3. Brazil**

In 1986, the Cruzado plan was put into practice in Brazil. In the period of 1964-1965, approximately 22 years before the Cruzado Plan, the orthodox

anti-inflation program was followed in Brazil (Bulhoes-Campos reform). Thanks to the support of this program by an authoritarian administration, radical changes were made and inflation was significantly reduced. However, in the 1970s, oil shocks and economic recession led to the loosening of monetary policies. Inflation increased rapidly again (Skidmore, 1978). When the year was 1986, the monthly inflation in Brazil came to 15%. The government, which thought that it could not gather political support for an orthodox program, decided to Cruzado Plan, a heterodox program. The main precautions taken with the Cruzado Plan are thus (Dornbusch & Simonsen, 1987):

- The prices have been frozen, and the exchange rate is fixed. The government aimed for zero-inflation. The public has been appointed to examine price controls.
- The wages have been converted into cruzados with an increase of 8% via the calculation of the average purchase power in the last six months. A wage indexation according to a 20% threshold.
- The rule in wages except for the 8% increase, has been applied to rent and mortgage payments.
- The bonds and demand deposits in old currency have been converted into the new currency (cruzados) by cut of three zeros from the currency. For the future maturities debt in old currency, except for the indexed liabilities, a conversion rule has been adopted.

The Cruzado Plan compromised with a fair and due income redistribution program that could however, put at risk, the stabilization target. Besides, relative prices were frozen at levels that were not consistent with a longer term equilibrium and indexation was not fully abolished (Modiano, 1988). Despite its initial success in reducing the inflation rate, two important factors were to undermine the Cruzado Plan. First, fiscal reform was only temporary. The expected increase in tax collection as a result of the fiscal package enacted in December 1985, turned out to be insignificant because most of the new levies were on financial transactions that were not longer attractive at the new lower inflation rates. On the other hand, the Administrative Reform Plan, encompassing the foreclosure of several government agencies, was postponed. Second, the government did not foster price realignments in the months previous to the stabilization program. In the end, shortages and black markets developed for some goods. The government rather than authorizing prices increases, resorted to subsidies and tax exemptions to keep these products available. The stabilization program implemented in Brazil showed early signs of success,

but inflation resumed shortly after price and wage controls were lifted (Ruge-Murcia, 1997).

### **3.3.4. Mexico**

Like the other countries facing chronic inflation problem, inertial inflation has also been experienced in Mexico. This inertia has two main reasons coming from institutional and expectation. While retrospective indexation and incremental contracts cause institutional rigidity, the public having no hope in the government to lower inflation because of past failed policies causes scarcity in expectations. To overcome this rigidity, incomes policy has been used (Kiguel & Liviatan, 1992). However, contrary to many other countries which apply wage and price controls, in Mexico the controls included only limited goods and services in the economy. The prices in the industry sector have stayed relatively elastic. Thus, limited scarcities which have shown to be temporary and seasonal came into place (Kiguel & Liviatan, 1989).

- The fiscal balance has mostly been achieved before applying price controls. After the stabilization program started, the government took additional tax precautions and continued its struggle to reconfigure the public through privatization. The fiscal balance happened healthily through decreasing expenses and increasing tax income (Kiguel & Liviatan, 1989).
- Exchange rate has been used as a nominal anchor and was fixed in the beginning.
- In the first stage of the program, in order to prevent the overvaluation of the currency, a huge devaluation has been made (Kiguel & Liviatan, 1989).
- In the second stage of the program, the starting value of the exchange rate has been changed (Kiguel & Liviatan, 1989; 1992).
- After 1988, the essential changes in the program have been announced. An increase in minimum wage and public sector prices has been made. A previously announced devaluation calendar has been accepted (Kiguel & Liviatan, 1989).

### **3.3.5. Peru**

In the 1970 and in early 1980s, neo-liberal programs had been implemented in Peru. But the costs-based reasons of inflation had been ignored and implementing only demand-contracting policies caused a slump in the economy. Scaling down the public sector weakened the

administrative capacity that is needed for the implementation of any development program. The inequalities in income distribution the program caused concretized societal divisions and the political sustainability of the program decreased (Pastor & Wise, 1992).

As it is thought in Peru that orthodox policies are unsuccessful in solving structural problems, heterodox stabilization programs have been adopted. The features of the stabilization programs accepted between 1985-1986 are thus (Mann & Pastor, 1989):

- Prices and exchange rates have been frozen. Before freezing the exchange rates, in order to preserve the international competitive capacity, a huge devaluation has been made. Interest rates have been lowered in order to ease the inflationist pressures caused by costs and protect profit margins. Local dollar accounts have been frozen and the economy has been cleared of dollar.
- To provide political support for the program, real wages have been taken up and credits with low interest rates have been provided for the small producer.
- The taxes are lowered, subventions have been increased, public sector prices have been fixed and by increasing budget deficits, the demands have been tried to be vitalized.
- The limits about debt service have been announced. While short-termed commercial credits and concessional formal credit payments have been limited to 10% of exportation incomes.
- A social democracy model in which real wages are rising and government actions are increasing, but the investments are made by the private sector is adopted. Through a social contract process that is named “Concertación”, an attempt to encourage the investments of major capitalists has been made.

With these policies implemented in Peru, it is thought that the debt service limits will provide area for growth, fiscal deficits and high wages will meet the demand and the local capacity will eventually grow to create an investment boom that will lower the cost pressures and also inflation (Mann and Pastor, 1989). However, Rodrik (1996) states that although the private sector gives full support to government policies, it is not possible to maintain such a policy. In a short time, the public sector and current account deficits increased significantly and foreign reserves were depleted. By the end of 1988, prices were close to hyperinflationary levels. Real wages, which had risen until 1988, fell sharply.

## **4. The Economy Policies Pursued in Turkey**

The government has announced in the beginning of 2022 that they will implement a new economic model. The minister of Treasury and Finance has stated that they are not obliged to use the orthodox economy policy and they will be using heterodox policies in relation to the realities of the country. When the economy policies which are implemented after 2018 are examined, it is seen that these policies are different than orthodox policies but they are not fully heterodox. However, in the past years in Turkey, policy implementations with heterodox elements have been encountered. In the extent of this chapter, the economy policies pursued after 2018 are discussed.

### **4.1. The Developments in Türkiye before August 2018**

The effects of the crisis in Türkiye which started in August 2018 and deepened down with the COVID-19 pandemic should be sought in early 2000s. Because these years have been a period in which monetary expansionary policies have been implemented in the European Union and USA and monetary plentifulness has been experienced. In this period, Türkiye gravitated towards the appeal of monetary plentifulness and the devaluation in exchange rates and did not prevent the hot money flow brought by the financial sector and real sector.

Under normal conditions, hot money flow into a country is not seen as a problem. However, its condition is that the foreign currency entering the country should be used in the right places which will increase production and exportation. If this money is directed to overnight interests or used in sectors which have low added value and have no exportation and foreign currency earning potentials, it is obvious that it will create problems in repayments. Because, these funds which enter the country through loans from other countries and portfolio investments create an increasing liabilities effect in payments balance and it is mandatory to make payments with the capital when the liability is matured.

Another reason that took Türkiye into crisis is the deficiency in domestic savings. With the trust in the single party government in Türkiye after 2002, the inflation and interest rates fell down rapidly and the consumption-oriented demands of economic units have increased. However, the increase in consumption caused a fall in savings, the rate of personal savings to GPD has decreased from 22% to 13% in 2000-2005 period and the domestic savings deficiency of the country has been started to be financed with external sources. So and so, the private sector foreign debt rate passed the public sector foreign debt rate and although this increase was interrupted in the 2008 global crisis period, it has continued

until 2018. Therefore, it is possible to show the increasing foreign debt burden of the country among the main factors which dragged the country into the 2018 August crisis.

When it was the August of 2018, it can be observed alongside some negative domestic variables in the country, some external developments also came into place. The problems experienced in deterioration in foreign political relations, democratization in the country and the supremacy of law and the discussions about the global system will enter recession can be listed as external variables. Table 1 shows some important developments in the macroeconomic variables of Türkiye in the 2000-2018 period.

*Table 1: The Changes in Some Variables in Türkiye's 2000-2018 Period*

	2000	2005	2010	2015	2016	2017	2018
Per Capita Income (\$)	4,337	7,456	10,743	11,006	10,895	10,590	9,454
Growth (%)	6.1	7.6	8.9	6.1	3.2	7.4	2.6
Inflation (%)	39.0	7.7	6.4	8.8	8.5	11.9	20.4
Real Interest Rate (%)	6.7	5.2	2.3	1.3	2.2	0.9	-2.0
Unemployment (%)	6.5	10.6	11.9	10.3	10.9	10.9	13.5
Budget Balance/GDP (%)	-8.0	-1.2	-3.4	-1.0	-1.1	-1.5	-2.0
Public Sector Debt Burden (%)	37.2	48.7	40.6	27.6	28.3	28.3	32.2
Private Sector Foreign Debt Burden (%)	10.1	10.9	15.8	22.0	22.9	25.3	26.6
USD/TL Rate (Average)	0,62	1,34	1,50	2,72	3,02	3,64	4,81
Current Account Balance/GDP (%)	-3.6	-4.1	-5.7	-3.2	-3.1	-4.8	-2.8

*Source: WDI, 2022; CBT, 2022; MTF, 2022.*

The interesting point in Table 1 can be stated as the rapid rise in inflation. Although the high inflation rates in early 2000s has fallen down to one digit with the government ensuring public fiscal discipline, it is observed that the inflation rate has risen again after 2016. About the rise of inflation, it can be said that alongside the exchange rate depreciation of TL, the low trust in the Central Bank and TL, negative real interest and uncontrolled monetary expansion have been effective. Also, the rise in exchange rates in foreign-dependent countries like Türkiye affect production costs directly and reflect on prices and the overall price levels rise. The developments in the 2000-2018 period in Table 1 can be summed up thus:

- The per capita income has first increased and then had a tendency to decrease after 2015,
- TL has lost value against dollar,
- Unemployment rates have risen,
- Real interest rates turned negative,
- Private sector foreign debt burden has increased,



- Public sector total debt burden has adopted again the tendency to increase.

If looked closely at the table, it can be observed that a significant part of the indicators has started to have the tendency to deteriorate as the year neared 2018 and the most evident problems are in the numbers of inflation, unemployment and private sector foreign debt. While foreign debt does not pose a problem for countries with high exportation and foreign exchange earnings, in countries with constant current deficits such as Türkiye, problems arise in meeting the obligation of foreign debt payments. With that, in periods in which the pressure on foreign currency increase, for firms to resolve their foreign currency deficits and households to protect the value of their savings, they increase the demand for foreign currency. This situation happened in Türkiye on August 2018 and in the first 8 months of the year, TL has lost 50% of its value. Although TL has gained relative value thanks to the announcement of the New Economic Plan in September, shock interest increase and the eased up tensions with USA, it can be observed that the effects of the crisis proceeded to present day without stopping.

#### **4.2. The Period in Türkiye after August 2018**

The first and foremost effect of the rise in exchange rates has been the increase in interest rates. Because of the rise, caused by the rise of exchange rates, in the imported input prices which are used as inputs in production, caused the overall level of prices to rise fast. Although in the first stage the Central Bank went on an increase in interest rates in order to control inflation and maintain real interest rates in positive, this situation caused a shrinkage in economy because of credit shrinkage. Because in the last quarter of 2018 and the first quarter of 2019 the economy shrunk by 1% and 9,8% respectively.

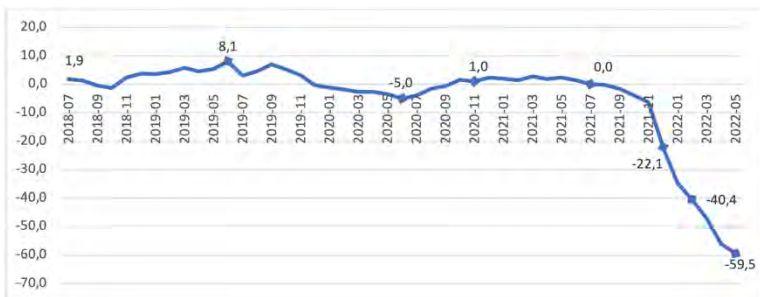
Although many problems arose in the period after 2018, the most discussed topic was the “interest is the cause, inflation is the effect” theory asserted by the government. This motto shows that Türkiye has abandoned the “high interest, low exchange rate” policy. The high interest low exchange rate policy is mostly used in developing countries to meet import inputs, hot money is drawn into the country with a higher interest rate than the world’s interest rate and with the coming money, the continuation of production is provided. However, although this kind of policy ensures lowering inflation, it causes the local production to lose its competitive power, an increase in foreign debts and a rise in unemployment rates. Thus, when looked at the last 20 years, although the economy has got a satisfactory growth rate, the unemployment rate has risen up and the firms

which lost their competitive power in local production inclined to relatively cheap imported goods.

In this regard, Türkiye is trying to solve the unsustainably high current deficit levels and the unemployment problem by implementing “low interest, high exchange rate” policy with the new economy model it is trying to form and wants to encourage local production. In such a model, imported goods are made more expensive by holding the exchange rates at a high level and the local production of these goods are tried to be promoted. Although such a policy has many problems in its basis, it is seen as a suitable model for Türkiye in which current deficit and unemployment rose to an unsustainable level. But the process is continuing in a painful manner. The use of foreign currency is rising (dollarization) in such an environment in which the local currency is losing its reputation, the inflation is rising, the income distribution to the detriment of people with fixed income, it is becoming harder to buy imported goods with high quality and the liabilities of the country in foreign currency are increasing.

On the other side, several developments came into place –FED adopting monetary tightening, Russia-Ukraine war, increasing energy costs– the public authorities ignored while the new economy model was being designed. After these developments, the model has been discussed heavily by the public opinion. Adding to that, with the new model, because of the low interest and increasing inflation lowered the alternative cost of saving in Türkiye that has domestic savings deficit, saving rates declined even more. Graph 1 shows the changes in real interest that is seen as the reason for the decline in saving rates after August 2018.

*Graph 1: The Real Interest Changes in the July 2018-May 2022 Period in Türkiye*



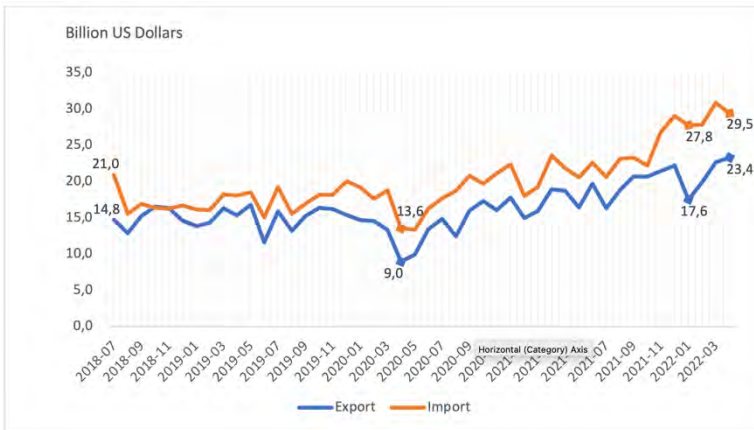
Source: TCMB, 2022.

As it is seen on Graph 1, also with the effect of the rapid rise in inflation after July 2021, the real interest rates went down to -59,5%. Negative real interest means that the money of the saver loses value against inflation.

Therefore, by implementing the political interest, the Central Bank has in a way punished saving. However, one of the main problems of Türkiye is the deficit in domestic savings. To resolve the mentioned deficit, Türkiye has applied for foreign financing for long years and the sum of foreign debt and current deficit levels rose to their current unsustainable levels. In present condition, because it became expensive to clear domestic savings deficit with foreign debt, the second choice is to lower investments, however, this will decline the growth and make the unemployment rates rise even higher. On the other hand, because of the interest rates which fell down to negative, it causes the investors put their savings on different instruments, goods, speculative investments, real estate, gold or foreign currency instead of saving. This situation causes both inflation and exchange rates to sharpen even more.

Despite the domestic savings deficit of Türkiye, there are two main reasons it looks to negative interest. The first one is to make consumption stay active and prevent the unemployment rates to rise even more. The other reason is Türkiye’s thought of ensuring superiority of competitive power in foreign trade. Because, since Türkiye implemented low and negative interest policy, the loss of value in TL increased and the trend of increase in exportation has been caught. But as Türkiye is a country that is dependent on importation, the rise in exportation caused the importation to rise too. Graph 2 shows the changes in Türkiye’s exportation and importation in the July 2018-April 2022 period.

*Graph 2: Export and Import in Türkiye in July 2018-April 2022 Period*



Source: TCMB, 2022.

In Graph 2, it can be observed clearly that since the August 2018 period in which low exchange rate policy was implemented, the targets could not be achieved. Adding to that, the deficit in current account balance exceeded 10 billion dollars in January 2022. Nevertheless, the average current account balance in the January 2013-July 2018 period being -6,3 billion; the average current account balance in the July 2018-April 2022 period being -3,7 billion dollars shows that the current account balance is getting somewhat better. If it is assumed that the results of import substitution policies will be received in the long run and if the implemented policies become successful, a rise in exportation is possible in the coming periods. Thus, according to the data published in the Government Gazette, while the number of investments with incentive certificates given by the Ministry of Industry and Technology in April 2022 have been 1.144, if these investments with a sum of 32,5 billion TL are realized, the projected employment is determined as 31 thousand people.

#### **4.3. The Heterodox Factors of the Pursued Monetary and Fiscal Policies in Türkiye in the Fight against Inflation**

The economic programs implemented in Türkiye are not similar to the heterodox stabilization policies implemented in the 1980s in some Latin American countries and in Israel. Therefore, it is not possible to define the economic policies in Türkiye as heterodox. That said, when we consider the policies outside of the accepted orthodox stability programs as heterodox, it can be stated that there have been heterodox implementations in Türkiye.

The economic policies pursued in Türkiye after 2018 have different features than orthodox policies. The use of monetary and fiscal policies in the same direction in economic stability programs is a widely accepted application. While the contracting monetary policies are implemented, it is aimed to implement fiscal policies in a contracting manner and support monetary policy. But in Türkiye after 2018 sometimes expansionary fiscal policy has also been pursued alongside tight money policies. The Central Bank of Türkiye (CBT) has used more than one interest instruments as political interest. Even though direct price controls have not been implemented, the government tried to control market prices with unofficial interventions. The low interest policy implemented with the interest is the cause, inflation is the effect logic is not suitable for orthodox anti-inflation programs. And also, there are other different factors of the policies pursued from the orthodox implementations. The implementation of expansionary monetary policies and the heterodox factors in monetary policy are summed up below (CBT, 2016; 2017; 2018; 2019; 2020; 2021):

- In 2017 in the period where tight money policy was implemented, the Central bank started to provide its funding from Late Liquidity Window (LLW). Using LLW as reference interest Instead of the weekly repo interest and increasing the interest rates through LLW (12,25 percent) while the weekly repo interest was 8 percent has been a heterodox implementation.
- The Central Bank reduced the upper limit of foreign currency opportunity within the scope of reserve options mechanism (ROM) from 60 percent to 55 percent and lowered all tranche gaps by 5 points. Turkish Lira Compositioned Future Forex Selling biddings have been started. When inflation is caused by inertia, dollarization happens. And the Central Bank tried to prevent dollarization with these implementations based upon the idea that one of the most important reasons for inflation being the increase in exchange rates.
- In 2018 the Central Bank abandoned LLW funding and started to provide all of its funding with weekly repo biddings. With that, the weekly repo bidding was not opened between 13 August-14 September 2018 and the funding was made with overnight lending interest.
- In the months of July, September and October of 2019, despite the increase in inflation, the Central Bank decreased policy rates gradually. Liquidity opportunity with an interest of 100 base points lower than policy interest rate for the market maker banks have been provided.
- Adding to the fact that the open market operations funding in 2019 has been to a great extent realized with future repo biddings for a week, the weekly repo biddings have been discontinued for two weeks throughout the year. In both periods in which the weekly repo biddings have been discontinued, the funding of Central Bank has been provided through overnight lending interest rate.
- In the March-May period of 2020, in order to limit the economic and financial effects of the pandemic, the Central Bank continued to reduce interest. The Banking Regulation and Supervision Agency (BRSA) started to implement the Active Ratio regulation, starting to take effect in the first day of May. With the credit packs presented by public banks in suitable conditions, especially the increase in personal loans sped up.
- In September 2020, the policy interest has been increased by 200 base points. Also, the difference between overnight lending

interest rate and LLW interest was set as 300 base points and its interests have been increased again through LLW.

- Although the Central Bank increased policy interest from 17 percent to 19 percent in March 2021, again on the grounds that to fight costs inflation in September-December period, it implemented reduction on the interest and made a discount of 500 base points in policy interest.
- In order to prevent dollarization in 2022, it has been decided to completely end the Reserve Options Mechanism.

The other heterodox policy implementations are thus:

- In order to remove the pressure on foreign currency and maintaining the exchange rate in a standard level, the exchange rate protected deposit system has been brought.
- With a regulation made by the government in June 2022, in order to reduce the pressure of rent increases on inflation and decrease the inertia gaining inflation, a 25% limit has been set for rent increases for the contracts renewed between 11 June 2022 and 1 July 2023.

## 5. Conclusion

Türkiye's economy has started to follow a new path with the new economy model it adopted. This model has reasonable grounds in fighting against the current deficit which reached unsustainable levels and the unemployment rate. However, the model has some inconveniences. The first one is the timing problem. In a period in which there is a COVID-19 pandemic, the Russia-Ukraine war, the oil prices are rising and foreign central banks implementing monetary tightening, it will be too painful to sustain such a model. While the production costs driven by the increase in exchange rates put pressure on inflation; the overall increase in prices with the influence of the war, the increase in oil prices and monetary tightening betrayed the people's trust on economy and the new model became distanced to getting the people's support.

When the policies implemented after 2018 are evaluated in general, it can be said that the interest rate cut policy implemented in this period has critical importance. First of all, Turkey is a country that has a domestic savings deficit and production is dependent on imports. An interest rate cut in a country with such constraints will cause exchange rate costs to be reflected in production and cause inflation. In terms of savings, the depreciation of the domestic currency will inevitably result in a decrease in

domestic savings. Therefore, the main goal of the government in this period was to increase exports by making imports more expensive and thus to increase growth and employment. However, the desired target was not fully achieved and in August 2022, exports increased by 13% and imports by 41% compared to the previous year. In the same period, the increase in inflation (PPI) was 144%. In addition, the increase in the exchange rate caused an increase in the country's external debt burden, making it difficult to import investment goods and important inputs such as natural gas, which are used in production. On the other hand, economic agents stopped seeing domestic money as a means of saving, and in some cases, TL even lost its feature of being a medium of exchange. Heterodox policies such as the exchange-protected deposit guarantee, the restriction of contracts made in foreign currency, and the limitation of price and rent increase rates, introduced by the government in order to prevent the exchange rate increase, had limited success.

However, exports increased in the country and Turkey was among the countries that positively differentiated with reasonable growth rates in a period when the global crisis continued. In addition, there has been a rapid increase in new investments that will replace imports and meet domestic and foreign demand. As a matter of fact, in July 2022, an incentive certificate of 38 billion TL was provided to entrepreneurs by the Ministry of Industry and Technology for investments that will provide 24 thousand additional employment. The increase in investments was also reflected in unemployment rates, and the unemployment rate, which was 14.2% in July 2020, decreased to 11.5% in July 2021 and to 10.1% in July 2022.

As a result, when the economic policies carried out in the 2018-2022 period are evaluated, it is seen that positive and negative results have been obtained. At this point, we come across the question of how to measure the effectiveness of these policies. Generally, the general acceptance of this issue is to look at the increase in social welfare in order to decide whether the policy implemented or the situation after resource allocation is good or bad. As a matter of fact, when the share of fixed incomes in national income is examined, it is seen that it decreased by about 10 points in the period of 2018-2022. The per capita income, on the other hand, decreased by about \$300 in the same period. Considering that the increasing inflation despite the growth experienced has reduced the purchasing power of wage earners, it can be said that the growth experienced is not inclusive and the income distribution has deteriorated. In our opinion, it would have been possible to achieve the same goal with less damage if less of the costs incurred as a result of interest reductions were provided to industries with high technology and value-added in the form of grants or advantageous loans.

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**THE ECONOMIC POLICIES PURSUED IN TÜRKİYE IN THE PERIOD 2018-2022:  
AN EVALUATION IN TERMS OF HETERODOX STABILIZATION PROGRAMS**

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# 8

## THE EFFECT OF CHANGES IN MONETARY POLICIES AFTER THE PANDEMIC

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### *Abstract*

*The Covid-19 pandemic, which started in Wuhan, China at the end of 2019, later affected the whole world. The course of the pandemic caused a contraction in the world economies over time. Many world central banks have taken various monetary policy measures during the pandemic. At the beginning of these were the policies to eliminate the contraction. Production revival, increasing low demand, increasing foreign trade volume and developing logistics channels can be shown as the objectives of these policies. In this process, other countries, especially Turkey, changed their monetary policy practices. Central Banks of developed and developing countries made significant changes in interest rates. In this study, the effects of the Covid-19 epidemic in the banking and finance sector all over the world and the policies implemented for this were examined and evaluated.*

*Key Words: Covid-19, Money Policy, CBRT, FED*

*Jel Codes: E32, C43*

### **1. Introduction**

The Covid-19 virus, which emerged in Wuhan, China at the end of 2019 and then spread all over the world, was declared a pandemic by the World Health Organization. During this period, countries have developed ways to fight against the Covid-19 pandemic through various policies. The measures and restrictions taken in this context have deeply affected the countries socially and economically. With the disruption of the supply and demand balance throughout the world, a decrease was observed in foreign trade data, the balance of payments disrupted and a decrease was experienced in all financial markets. The

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## THE EFFECT OF CHANGES IN MONETARY POLICIES AFTER THE PANDEMIC

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pandemic has become difficult to control because of supply and demand shocks, especially in developing countries. In the global economy, industry and service sector production, domestic and foreign trade declined rapidly, consumer and producer confidence indices decreased, the budget revenues of the states decreased and the expenditures increased. The increase in the impact of the pandemic has seriously affected the supply chain, consumption, and economic activities, bringing some sectors to a standstill. In this context, the spillover effect that emerged with the supply shortages throughout the world differed between sectors.

Countries have been able to take measures with lower costs compared to the measures of epidemic-induced crises by keeping large amounts of foreign currency and gold supplies in their central banks to use against financial crises. On the other hand, measures to be taken against epidemic-related crises such as Covid-19 make it difficult to take measures against health-related crises due to the high cost and uncertainty of time in stocking resources such as vaccines and other medical products. And this makes epidemic-related crises to cause greater negativities when they occur.

Every crisis experienced since the past has damaged countries within the frame of its impact area. Unlike the 2008 global financial crisis, human and public health gained priority during the Covid-19 period, and the emergence of how negatively the economic and commercial movements of the country's governments are affected in such extraordinary situations has highlighted the importance and dimensions of the financial measures that policy makers should take against such epidemic-induced crises.

To eliminate the negative effects of the global humanitarian and economic crisis caused by Covid-19, various aid programs have been implemented by states and international organizations. For example, has take measures such as postponement of tourism accommodation tax, easement rights and revenue share payments within the scope of the obligations of the accommodation sector for postponing the financial liabilities of the sectors negatively affected by the pandemic; lowering the value-added tax rate in air transport; loan guarantee fund support to meet the financing and loan needs of companies; reducing the down payment percentage in the real estate sector in order to encourage house sales; minimum wage support to reduce labor costs of companies, short-time working allowance; corporate tax accrual and deferral of payments; deferral of loan principal and interest payments, check payment support loan; extending and deferring the maturity of payment of existing debts of companies.

As the number of cases increased, other countries also provided tax relief, resource transfer and credit-financing support to the private sector.

According to the report cited by the IMF, the world's 10 most developed countries have allocated approximately 20 percent of their GDP to fight against Covid-19, while the world's second most developed 10 countries have allocated 5.74 percent (IMF, 2021). While the share of state aid in GDP in emerging markets was 5.6 percent, the share of state aid in GDP in low-income developing countries remained around 2 percent (UNDP, 2020).

The pandemic process has had significant effects on inflation, growth and unemployment rates, which are among the most important macroeconomic indicators of national economies. Within the scope of fighting against the negative effects of the pandemic; while central banks take steps to provide liquidity with monetary policies, measures to support households and the private sector are implemented within the scope of fiscal policies.

Within the scope of monetary policy measures, which show faster results on economic activities compared to fiscal policy measures; developed and developing countries' central banks resorted to expansionary monetary policy instruments to lower the policy rate.

However, the coordination of monetary and fiscal policies for effective macroeconomic results is indisputable. Unforeseen developments have left central banks in a difficult situation with the Covid-19 epidemic affecting the whole world. During this period, as a result of the decisions of almost all countries to close and restrict activities to prevent the contagiousness of the pandemic, significant decreases have occurred in economic activity. Also many countries initially announced financial support packages in order to limit the economic contraction, while central banks adopted an expansionary monetary policy.

Central banks increased the liquidity volume and monetary base in the market, started asset purchase programs and rapidly expanded their balance sheets. With the reduction of policy interest rates, credit costs have decreased and the losses in production and national income have been tried.

In the face of the shrinkage of the global economy, the macroeconomic balances turned upside down over time, and countries started to face budget deficits by increasing expenditures due to the support packages and decreasing tax revenues. Therefore, countries have increased their money supply to meet the budget deficit. World central banks, especially the US Federal Reserve, have begun to significantly increase the money supply (ECB, 2020).

## THE EFFECT OF CHANGES IN MONETARY POLICIES AFTER THE PANDEMIC

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The difficulty of controlling the virus has necessitated some protective measures in all countries. A series of measures such as the ban on travel, the closure of workplaces, social isolation, and lockdown have brought many parts of the economy to a standstill. Many sectors such as education, logistics services and sports have been adversely affected by the pandemic. Many developed countries have allocated significant resources for the rehabilitation and treatment of Covid-19 patients and their families. The excessive expenditures that emerged due to the support of various institutions by the states also increased the inflation.

Central banks started to increase policy rates in order to control this rise in inflation rates. Since many central banks thought that the rise in inflation was temporary, they did not increase policy rates rapidly and at a high rate at first. However, when it became clear that the rise in inflation was not temporary, the central banks entered the cycle of increasing interest rates. As a matter of fact, the number of central banks that have increased interest rates has also increased since the middle of 2021.

In the fight against rising inflation, the central banks of these countries reduced the amount of monetary expansion and started to increase policy interest rates. In addition, central banks of developed countries give signals that the tight stance in monetary policy will continue or even become tighter with verbal guidance.

The strategies of the central banks of developed countries to fight inflation in their own countries make the fight against inflation of these countries more difficult. This is because interest rate increases in developed countries cause less foreign capital inflow to these countries or outflows from these countries. This situation, which firstly affects the financial markets, causes the currencies of developing countries to depreciate. Since the depreciation of the local currency increases the prices of imported goods and services, it becomes a factor that makes difficult to fight against inflation.

The policy rate, which central banks use as their main policy tool, also reflects the attitude that should be followed in the face of macroeconomic developments. Considering the central bank policies implemented in different countries; it is seen that countries use rates varying between the lower and upper limits of the interest rate corridor. The width of the interest rate corridor is also an indicator of the difference between loan and deposit rates. In this context, central banks can use one of these limits for price stability and the other for financial stability. In recessionary periods of the economy, financial institutions may prefer to invest their funds in the central bank, which they see as less risky, instead of distributing their funds to the market as loans. Central banks that see this situation can force

banks to distribute their funds to the market as loans, by lowering borrowing rates (or even stopping accepting deposits from banks altogether). It is expected that this practice will yield beneficial results in terms of continuing the functioning of the financial system in the country and ensuring financial stability.

The increase in the money supply further negatively affects the vulnerability of the economy in developing countries that borrow in foreign currency, excluding developed countries such as the USA. Uncertainty undermines the trust in the domestic currency, putting pressure on exchange rates, and making balance of payments more difficult in addition to the problems experienced due to the crisis. As in Turkey, in countries where production and export dependency is high, the increase in exchange rates causes an increase in production costs and an increase in inflation. The constant increase in the money supply has many drawbacks, especially inflation. The fact that the pandemic process continues longer than expected and that the excess demand arising from the extraordinary money supply as a result of the irregularity in the activities of the workplaces due to the restrictions cannot be met with production brings the rise in inflation. Central banks, which are the regulatory agency and supreme authority of the financial system in each country; took various measures to achieve the monetary stability target. Central banks have been the first defense mechanism in ensuring the stability of the global financial system and supporting the world economy.

In this direction, central banks have taken many measures to support financial stability and market functioning. In the first months of the pandemic, the central banks implemented many monetary policies such as liquidity support, policy interest rate cuts, asset purchases, loan facilities, required reserve reductions, clearing lines, reduction of capital requirements, and term financing plans.

## 2. Literature

In their study, Arabacı and Yücel (2020) examined that the CBRT created a comprehensive package of measures for the epidemic, and in this context, interest rates were reduced, the net funding amount was increased and additional liquidity opportunities were included.

Cinel (2021), examining the financial and monetary effects of the pandemic on the Turkish economy, seems to have a high negative impact on the Turkish banking and finance sector of the Covid-19 process. Depending on the course of the epidemic, the negative impact of the



implemented monetary policy is expected to continue for a certain period of time.

Ersoy *et al.* (2020) In the study, in which the effects of the Covid-19 outbreak on the Turkish Banking sector were investigated, according to the analysis made on the basis of public, foreign capital, domestic private capital deposit banks and participation banks, banks' liquidity provision, loan disbursement, extension of loan maturities in the face of negative developments during the epidemic period, It was evaluated that he applied to measures and supports such as reducing the follow-up rates.

Kaya (2020), the study in which the impact of the pandemic on the world economy was examined with global indicators (global public finance balance, global trade volume, global inflation, global unemployment and global economic growth) was compared with the 2008 Global Crisis. The effects of the destruction that the pandemic has created and is creating on a global scale are discussed.

In their study, Makridis and Hartley (2020) estimated the impact of the pandemic on GDP and the growth rate of GDP for the future in the United States. In the research, they examined the financial effects of Covid 19, fiscal and monetary policies, GDP growth, financial markets and corporate activities.

In the study in which the effects of the Şanlı (2020) Covid-19 pandemic on the United States and China economies were investigated, it was mentioned that the manufacturing industry and total industrial production began to decrease, and there were losses in the services sector and international trade.

In the study of Türmob (2020), it was stated that developing countries were caught in a fragile position due to the epidemic, and pointed out that the epidemic caused fiscal and social policies to come to the fore, and monetary policies may have inflation effects.

Bölükbaş (2020) in the study examining the effect of the Covid 19 process on monetary policy in Turkey, as a result of examining the relationship between inflation and interest rate with econometric tests, it was seen that the Covid-19 epidemic had an effect on inflation and interest rate developments in monetary policy applications.

### **3. Monetary Policy Practices of the US Federal Reserve (Fed) and World Central Banks during the Pandemic Process**

The US Federal Reserve is an important decision maker for the world economy with its organizational structure, independent stance and monetary policies. The monetary policy decisions of the US Federal Reserve, the FED, closely affect the economies of developing countries. With the US dollar being the most important reserve currency in the world and the FED's authority to print dollars, policy implementations are closely followed by the whole world. It is seen that the central banks of the developing countries direct their decisions in line with the practices of the central banks of the developed countries.

The policy decisions taken by the FED shows itself on the central bank balance sheet structures of other countries. When the FED decides to implement an expansionary monetary policy, increasing the money supply and lowering the interest rates; international investors are shifting their holdings in US banks or bonds to countries where they can earn more interest income. In this case, capital inflows to other countries increase, the US dollar becomes abundant in these countries and the dollar rate decreases. Central banks, which try to keep exchange rates within a certain range/level, buy dollars from the market through reserve requirements or open market operations (currency buying auctions) in such cases.

In developed countries, contractions began to occur with the pandemic, and in 2020, when the pandemic was effective, the annual growth rates changed negatively and service and goods production activities were adversely affected. The world annual growth rate points to the same situation (OECD, 2021). Countries, especially the FED and the European Central Bank, have started to take hard monetary policy steps instead of expansionary monetary policy tools. Inflation has gradually started to show a risk in front of economic growth. Increase in commodity and freight prices, supply shortages and delays in production; leading to an increase in producer and consumer prices.

Increasing concerns about rising inflation around the world and new supply shocks prompted the central banks, especially the FED. Since the FED is the world's largest central bank, the Fed's change of monetary policy tools; It significantly affects the value of parities, commodity prices, crypto assets and stock markets. For this reason, the monetary policies followed by the FED among the major central banks, and especially the interest rate decisions, attract the close attention and interest of investors, other central banks and country governments all over the world.

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While the size of the Fed's balance sheet was below \$4 trillion before the pandemic, it exceeded \$8 trillion by mid-2021. In the USA, total spending levels increased, causing annual inflation rates to deviate from the targeted 2 percent, reaching 4 percent by mid-2021. The FED decided to increase the interest rate and reduce the balance sheet against the increase in inflation, which was thought to be temporary at first but remained above the expected over time.

The decrease in the amount of dollars in the world as a result of the FED's implementation of tightening monetary policies causes the exchange rates to increase rapidly and the level of financial fragility to increase in countries with high dependence on foreign capital. The interest rate decisions taken by the FED have an impressive role on the interest levels in other countries.

The monetary policies of the FED are determined prospectively in order to achieve the final monetary policy objectives for the targeted macroeconomic aggregates. The FED's insights are very helpful in facilitating the effectiveness of the policy framework. It is understood that the US economy is in the view of continuing its restrictive monetary policy practices until it is completely out of the conditions of the pandemic crisis.

When high demand, wage increases and sharp rises in energy prices were added to the pro-supply problems in other countries, inflation reached high levels at the end of 2021 that have not been seen in developed countries for many years. When inflation, which was initially seen as temporary, became permanent, central banks around the world made changes in their monetary policy practices.

The change in monetary policies is implemented by ending the monetary expansions initiated after the pandemic and gradually normalizing. In the face of quarantines causing supply and transportation problems and the corresponding rise in prices, Central Banks tend to increase interest rates.

*Table 1: Monetary Policy Measures Implemented During the Pandemic Process*

Countries	Regulation
Turkey, USA, New Zealand, Japan and UK, Nigeria, South Korea and Canada	Policy rate cuts
USA, China	Providing liquidity to financial (bond and stock) markets
UK, Nigeria, USA, Australia and Turkey	Credit flow to banks, SMEs, the public health sector, individuals and key businesses

*Source: FED, 2020b*

Global central banks and treasuries have intervened in the pandemic process with emergency loans and other additional financial support. To reduce the economic effects of the pandemic, countries initially implemented expansionary monetary policies and reduced policy rates (Table 1). Most of the developing countries have implemented asset purchase programs. For example, Turkey loosened its monetary policy too much, thus achieving positive growth in 2020 despite the pandemic. However, in the face of the excessive increase in inflation, monetary policy had to be tightened at the end of 2020.

Central banks provided support to households and businesses as well as making function good the financial system with liquidity support. The decline in loan rates and the support of liquidity facilities were influential on the increase in loan growth (CBRT, 2020c).

In the early days of the fight against the Covid-19 crisis, major central banks such as the European Central Bank (ECB), the Bank of England (BoE) and the Bank of Japan (BOJ) adopted expansionary monetary policies under the leadership of the FED. They quickly lowered policy interest rates. As a result of lowering credit costs, it is aimed that more people benefit from cheap credit opportunities. Policy interest rates were rapidly lowered by attempting to compensate for the production and employment losses in the real sector.

Within the scope of ECB and BoE measures; It has taken additional decisions such as meeting the liquidity needs of banks, increasing the limits within the framework of open market operations, providing targeted liquidity opportunities to banks to ensure the uninterrupted flow of credit to the real sector, and extending the maturity of rediscount credits for export and foreign exchange earning services. However, the fact that the epidemic lasted longer than expected, the fear of increasing supply-side disruptions, and the fact that inflation reached the highest levels of the last ten years caused the central banks of developed countries to take tightening measures. The ECB signalled that they would end the negative interest rate policy due to concerns about inflation and the weakening of the common currency, and then that it would increase interest rates. It is expected that the tightening monetary policy will continue until the causes leading to the increase in inflation are eliminated, the effect of the pandemic is reduced and the normalization in monetary policy is reflected on the economy.

### 3. Monetary Policy Practices of the Central Bank of the Republic of Turkey during the Pandemic Process

Factors such as the problems experienced in the supply chain, the increase in the demand for essential goods, the inability of the enterprises to keep up with the new working conditions, the increase in the input costs of the producers and the volatility in the exchange rates have caused an increase in inflation during the pandemic in Turkey. Especially in sectors such as food, transportation and health, significant inflation rate increase was observed.

Against the Covid-19 pandemic, Turkey has taken practices and regulatory measures such as providing price stability, supporting the real sector, strengthening the monetary transmission mechanism, ensuring financial stability, supporting households and businesses.

When the effects of the pandemic process are examined in terms of the Turkish economy, the depreciation of the TL, the decrease in the central bank reserves, the exchange rate shocks have further increased the structural problems.

*Table 2: Monetary Policies Implemented in Turkey during the Covid-19 Process*

Issue Date	Regulation
March 17, 2020	Policy rate cut (9.75 percent), increase in banks' liquidity limits through Open Market Operations, and providing banks with domestic and foreign currency liquidity
March 20, 2020	Extending the maturities of rediscount credits
March 31, 2020	OMO direct purchase transactions with front loading, Possibility to sell GDDS purchased from unemployment fund insurance to market maker banks to the CBRT
April 17, 2020	Update the ratio of nominal size of OMO portfolio to CBRT analytical balance sheet total assets from a maximum of 5 percent to a maximum of 10 percent
April 18, 2020	Launch of BRSA's Asset Ratio (AR) application
July 24, 2020	Increasing the FX reserve requirement ratio for all banks by 300 basis points across all liability types and all maturity brackets
August 6, 2020	Limitation of additional liquidity facilities provided to banks
August 12, 2020	Removal of limits granted to banks within the scope of OMO
November 12, 2020	FAST (Instant and Continuous Transfer of Funds) system activation
November 20, 2020	Increasing the policy interest rate from 10.25 percent to 15 percent
December 31, 2020	Removal of Asset Ratio (AR) application by BRSA

*Source: (CBRT, 2020-2021a)*

The progress of the epidemic, after the pressure from the balance of payments in 2018 and 2020, and the heavy depreciation in the TL, made

the fight against inflation even more difficult. Rising inflation and falling purchasing power have reduced predictability and confidence in the economy.

In the early days of the pandemic, Turkey achieved growth as a result of its expansionary monetary policy. To reduce the effects of the pandemic, within the scope of measures to increase liquidity, bond purchases were made to increase liquidity in the Government Domestic Debt Securities (GDDS) market, and the upper limit for Central Bank bond purchases was increased to 10 percent of the CBRT balance sheet size. Measures have been taken to provide liquidity facilities to small and medium-sized companies and export companies to continue the credit flow in the target sectors affected by the pandemic (CBRT, 2020, p. 2). The collateral pool has been expanded to include asset-backed and mortgage-backed securities. Required reserves of banks have been reduced. Funds were provided to the banking system at lower costs and with longer maturities. As a result of all these monetary expansion measures, the balance sheet of the central bank grew by approximately 50 percent in 2020, and the depreciation of the Turkish lira in parallel with global developments have positively affected the inflation outlook (Kara, 2021, p. 295).

The gap between producer and consumer inflation started to be above the long-term trends. Since price increases were above the historical average, monetary policy had to be tightened at the end of 2020 and policy rates were increased. Increasing uncertainties because of the increase in inflation exceeding expectations and the depreciation of the national currency and foreign exchange interventions caused the central bank's foreign exchange reserves to melt and risks to increase.

As a result of the restrictions imposed due to the pandemic, the decrease in export and tourism revenues increased the current account deficit. In order to eliminate the drawbacks of high inflation, monetary tightening was implemented. At the end of 2020, the asset ratio regulation, which is an application to increase the loans given by banks, has been abolished. Monetary tightening continued until March 2021, and the pressure on the exchange rate and risks in financial markets decreased. On March 19, 2021, an expansionary monetary policy was implemented. With the steps taken and determinedly implemented to strengthen sustainable price stability and financial stability, CBRT started to reduce the policy rate from 19% in March 2021, in line with the prediction that the disinflationary process will begin with the re-establishment of the global peace environment. In this context, the CBRT evaluated that the policy rate, which was updated under the current outlook, was sufficient with the reduction of the policy rate. In order to institutionalize price stability in a

sustainable way, the CBRT continues to review a comprehensive policy framework that encourages permanent and strengthened liraization in all policy instruments. (CBRT, 2022)

#### **4. Conclusion**

The policies implemented by central banks are of great importance in terms of speed and impact. In this direction, central banks have implemented unprecedented speed and magnitude measures during the pandemic. In order to alleviate the negative effects of the Covid-19 epidemic on the economies, developed countries, especially the USA, have started to implement large-volume monetary and fiscal expansion policies.

Developed and developing countries' central banks have used instruments such as liquidity supports, asset purchases, clearing lines, policy rate cuts, credit facilities, term financing opportunities, foreign exchange intervention, required reserve reduction and capital requirement reduction. With these instruments, central banks aimed to reduce the volatility in the markets by responding quickly to the Covid-19 pandemic. If developing countries, including Turkey, get the opportunity to attract some of the excess liquidity in the world to their own countries, they can alleviate the devastating effects of the crisis to some extent. In particular, the policies implemented by central banks in this sense will also be guiding in terms of financial stability.

Although global central banks have intervened quickly and widely against the Covid-19 pandemic, it is not possible to predict exactly what the long-term macroeconomic consequences of the pandemic will be. However, even though the pandemic has increased the uncertainties in the world economy, it is expected to have positive effects on real production, employment and labor market in the future, based on macroeconomic data, thanks to the monetary and financial measures taken. It necessitates the development of more comprehensive macroeconomic policies for these areas. The role of joint action in the global framework to fight against the consequences of the pandemic is great.

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AFTER THE PANDEMIC**

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# 9

## POLITICAL ECONOMY OF STATE INTERVENTION IN CHILD LABOR<sup>1</sup>

*Pelin Vildan Kökçü Delikaya<sup>2</sup>*

### **Abstract**

*In this study, in which the state intervention on child labor is discussed, it is emphasized that child labor is a concept that is shaped in the hands of adults, and it is revealed that the dynamic that determines the essence of state intervention in child labor is a matter of class and mode of production, which is also the main determinant of child labor and state intervention. The historical sources of state intervention were researched and it was concluded that child labor was intervened according to the requirements of capital, especially in the context of the modern state and within the framework of capitalist mode of production and relations. The approaches and policy recommendations of the World Bank and other international institutions, which are the producers of today's child labor policies, are also discussed in this context. Child labor and related policy recommendations were evaluated in the Covid-19 process. The solution proposals and determinations recommended by the ILO and UNICEF to the states were discussed. In this context, it has been emphasized that the policies that never try to eliminate child labor, leave the poor child alone, and tries to make it work and manageable continue, and the necessity of new solution proposals are emphasized.*

*Keywords: child labor, state intervention, international institutions.*

### **1. Introduction: On Child Labor**

**I**n the history of material production, child labor, which is mostly slavery in the Ancient Greek and Roman Period, an agricultural servant working on the land in the Feudal Period of the Middle Ages, and an industrial worker in the 19th century, is a concept in which many theoretical discussions are made. Child labor is a concept that we encounter both in the early modern period and in modern times. In ancient and Roman civilizations, the existence of the child is adjacent to the father and still appears to work as a labor force. In the middle ages, however, the child is not seen as different from the adult, but he puts forth his labor by working in jobs that are more compatible with his physical strength. In

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modern times, child labor appears as a worker child, and Bentham even considers child labor as "living treasures". The ever-used child labor existed in the lower classes of the Middle Ages, as Ariés (1962) emphasizes, but paradoxically deteriorated in the 19th century despite historical advancements and child labor was systematized and used extensively in an unprecedented way. In this sense, the indigent child has become a labor reserve that can always be used by the wealthy, where they would never hesitate to increase both the wealth of the nation and their own. In this sense, child labor is the expression of a labor source that creates material value, as a fact that we encounter in many stages of history<sup>3</sup>.

Child labor, like everything related to childhood, is shaped by the hands of adults. The phrase "adults" not only include families, but also social, cultural, economic and political policies that can touch the life and labor of children, namely the state. Therefore, it is possible to find the traces of child labor in the economic, social and political policies followed by the state. For instance, many regulations are carried out by the state from the Old and New Poverty Laws that shape child labor, to the Child Labor Laws that restrict child labor in the UK by shaping the competition between different fractions of capital on behalf of the urban bourgeoisie, thereby breaking the competitiveness of the countryside, and the Factory Laws (1864-1874) that limit the working age and raise the starting age, from the Prevention of Cruelty to Children Act of 1889, which protects children from violence at home and at work, to the Children's Act of 1908, which establishes separate courts for children and prohibits tobacco use for ages under 16.

Other than that, from public expenditures such as conditional or unconditional financial transfers, education subsidies which are implemented by the state in tries to reduce child labor by focusing on the poor, to the International Labor Organization (ILO) practices that produce policies in a global framework today, from the policies of the World Bank to law, education, health, social, economic and political policies are embodied and implemented by the state and negotiated and decided upon by states and the states leading international organizations. It is therefore important to understand the state that shape child labor to this extent ant its interventions in child labor.

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<sup>3</sup> For example, the information that children were employed in the Sumerians is obtained from the tablets. The advice of a Sumerian father to his mischievous son is as follows: "Be a man, don't roam the streets. Look, I've never sent you to work in my land in my life time. People like you work to support their families. I never once said, 'Go, work.'" (Başaranbilek, 1993, p. 50).

In this study, the real meaning of state intervention regarding child labor is sought. In this context, historical examples of the state's intervention in child labor are briefly listed and then the logic of the state's intervention in child labor is revealed in the light of the emergence of the modern nation state, classical liberalism and Bentham's utilitarian philosophy. Then, in order to build a bridge from the past to the present, the World Bank's policies on child labor, which form the basis of state interventions in child labor by asking the "What about today?" question, are explained on the basis of the idea of the global social order it has created. Finally, the determination and solution proposals of international institutions and states regarding child labor in the Covid-19 process are examined. In this framework, the solution proposals of the state intervention to the problem of child labor are questioned and the main purpose of the intervention in child labor is revealed.

## 2. Historical Basis of State Interventions in Child Labor

State intervention in child labor has been a controversial issue throughout history. Does the state intervene to eliminate child labor or to regulate it?

Before the 20th century, between the years of 1500-1860, it is possible to divide the policies of the state towards children into two broad time periods. 1500-1750 and 1750-1860 (Cunningham, 1995, p. 111).

Between 1500 and 1750, we can observe the actions of the state and benevolent public actions that touched and directed the lives of countless children, and the reason for the state's intervention in the lives of children in this period is mainly child poverty. These periods, which coincide with the commercial phase of capitalism and where mercantilist policies are adopted, are the periods in which child labor is used intensively. The charity movement<sup>4</sup> towards the poor, which was common between 1500

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<sup>4</sup> In the late 14th century, many cities in Italy, France, Germany established charities. Most of these orphanages were established not by the church but by urban institutions. There were also orphanages established by the wealthy for reasons such as keeping their names alive. In Italy, Francesco Datini is one of them (Gavitt, 1990). In this sense, for personal immortality and the future of the state, the rich began to establish schools, to set aside money for the dowry of poor girls and to finance apprenticeships for poor boys (Gavitt, 1990; as cited in Cunningham, 1995, p. 113). The economic crises and unrest experienced caused the secularization of philanthropy, and in many cities in Western Europe, merchants and charities, which were not managed by the church or by these people, began to be seen in the late 15th and early 16th centuries. N. Davis says this is because of the international movement for welfare reforms that continued for a decade in Europe after 1520 (Fairchild, 1976, p. 21); Cunningham, 1995, p. 114). Between 1522 and 1545, Germany, France, Scotland and Switzerland reshaped their social policies and the central authorities active in France, the Netherlands, England, Spain and Scotland did this (Lis & Soly, 1979; as cited in Cunningham, 1995, p. 114). The main goal is social control. In this

and 1750, was started by the church and then spread out of the church (Cunningham, 1995, pp. 112-113). The main reason for this is to control "stray" and "beggar" children and to maintain public order. In other words, the key subject of this movement is the poor child. Poor children became the focus of city institutions, the church and public authorities, and became the subject of intervention in order to maintain social order; charities were established for abandoned, homeless and orphaned children. At the same time, we even come across practices such as taking one child from families with four children. In summary, in these years, the state, with the practices of workhouses, beggar detention centers, and general hospices; Laborers Act enacted by Edward III, dated 1349, which forced the poor to work; intervened in child labor through practices that compelled the poor and their children to work (Castel, 2017, p. 128) within the scope of the, Craftsmen Act of 1563, the Poor Laws of 1662-1795, the 1662 "Settlement Act" and the 1795 "Speenhamland Act".<sup>5</sup>

In the years between 1750 and 1860, intervention in child labor was realized through nation states that were born in the 19th century. In this process, the state intervened in child labor with policies that would affect childhood and family life, mainly through the labor market (Lavalette, 1999, p. 70; Rahikainen, 2004, p. 211). In this context, in the early industrializing countries, the state is governed by poor laws, factory laws, child labor laws, education laws; by regulating working ages, sectors of employment, and school enrollment and attendance. States intervened in child labor with supervision and parliamentary research and decisions (Humphries, 2003; Kirby, 2003, p. 93) and made practices that forced poor children to work.

In this sense, the first thing we need to realize in order to understand the context in which child labor enters into the intervention of the state for both periods is the "state of being poor". So much so that in the historical labor adventure that we brought to the capitalist period starting from the Feudal Period, the child, who is currently working and became a worker with the industrial revolution, belongs to the poor of the land and the urban poor, and his story continues until he is sentenced to the factory. In this context, the state's intervention in child labor is based on the state of being "poor". Because the state of being poor is desired to continue both

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sense, since the 16th century, the problem of maintaining public order has been focused on, especially for stray and beggar children.

<sup>5</sup> But for both time periods, there are two main reasons why states and charities formulate and implement policies for children: One is children whose families are either unwilling or unable to care for them; these children are illegitimate, orphaned children; in other words, a reserve army of labor, in Marx's words. These children may also be children of already married families. The second reason is schooling and the desire to spread it to the whole society, the main reason for which lies in the logic of the emerging nation-state.

in the mercantilist period and in the capitalist period. The basis of this desire is to "force work" the poor<sup>6</sup>. What draws our attention here is the existence of the rule on the poor child's even in the 14th century. The management of the poor child is so significant that in the 16. and 18. Centuries it left the intervention area of the church and shifted to the area of intervention of public authorities. In this context, the Old Poor Laws were put into practice. However, like everything that falls under the state's intervention, the intervention of the poor child also has a hidden meaning: this is the state's<sup>7</sup> seeing the poor child as a source of labor.

Both the Old and New Poor Laws are inspired by the pursuit of order. This search for order basically aims to regulate the market (labor market) according to the requirements of capital accumulation (Corrigan & Corrigan, 1979; as cited in Yılmaz, 2012, p. 123). Because the market system, which is "... the system in which all economic activities are freed from the control of the society and directed by the markets that operate according to their own rules...", the society and all human relations within the society are also subject to a non-social, disconnected mechanism (Polanyi, 2013:19-20); In this structure, which is incompatible with human nature and cannot exist without breaking the social structure, the existence of the state institution is also for the market and requires the commodification of labor after the land and money that are commodified within the operation of the market system (Polanyi, 2013, p. 127). In this sense, the emerging market crystallizes the real place of child labor both in the eyes of the state institution and in the eyes of families: The child must work despite being a child. Because it represents a pure labor power. Also, and more importantly, child labor is cheap, obedient, and docile. These features of child labor are indispensable for the capitalist mode of production and relations that emerged in the 19th century and that basically shaped childhood, which is the main component of child labor, and created a break in its meaning<sup>8</sup>. What makes child labor, which has been differentiated according to the breaks in the mode of production and relations in the material production history, and whose intensity of use and areas of use have changed, is essential and never indispensable for the

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<sup>6</sup> In this sense, we see that the poor are forced to work and the most systematic form of this is done in England with the laws of 1349, 1563, 1662-1795 (Castel, 2017).

<sup>7</sup> In the study, the concept of state is accepted as a structure that serves the interests of capital in the long run. In particular, it is discussed in the context of the "instrumentality" of the capitalist state. In this sense, the intervention of the capitalist state in child labor is focused on.

<sup>8</sup> Marx (2000) says that the economic community is constructed by the relations of production themselves and by the specific political form of those relations of production, namely the state. In this context, while trying to understand the child and child labor in an economic community, no matter what historical stage it is, our main point is that what builds the economic community is the production relations themselves and the class struggle and, as Marx stated, the specific political form of those production relations.

capitalist mode of production, when we come to the 19th century, lies in the general formula of capital. The cheapness of child labor has been so precious to classical liberalism and the modern nation-state mainly because it serves the general formula of capital.

The main problem is the capitalist mode of production itself, and cheap labor is the only reality that the labor market will never give up for every country in this process. This is the most important way for capital to increase the rate of profit (Marx, 2000, p. 101). Let's try to find an answer to our question through the meaning of labor for capitalism. Capitalism wants to make unlimited use of labor power. In this mode of production with unlimited material goals it must be  $P' \rightarrow \infty$ . The general valid formula of capital in the capitalist process is now valid:  $P \rightarrow M \rightarrow P'$ . That is, the conversion of a given amount of money into a larger amount of money through commodities. However, that is that,  $P' \rightarrow \infty$  (Sahlins, 2010, p. 89). In other words, "simple commodity circulation,  $M \rightarrow P \rightarrow M'$ " (Sahlins, 2010, p. 88) which was peculiar to peasants in the feudal period, is no longer valid; what matters is the accumulation of wealth and its constant self-transcendence (Sahlins, 2010, p. 89). As Bataille (2010) emphasizes, the capitalist economy is always in pursuit of creating surplus and tends to distribute the said surplus for the benefit of the capitalist class through the capitalist state.

While capital makes unlimited use of labor power, it does this by keeping labor costs low and creating a reserve army of labor. Therefore, in order to increase his profit, the capitalist wants to prolong the social labor time without increasing the rate of paid labor. (Foley, 2010, p. 65). The capitalist producer's ability to do this requires a constant struggle with the workers. It is important for this to understand child labor from the perspective of capital. Is there a more readily available source of labor than child labor for less wages and longer hours?

In this context, one of the first resources that can be looked at in the context of the state institution's effort to regulate the market and commodify labor is the Poor Laws. These laws are an expression of the search for a solution to how the poor can be employed and how their corrupting aspects can be contained, that is to regulate the market: The poor must be managed and employed. The main reason for this lies in the fact that mercantilism links the wealth of a nation to the number of the poor and their employment (Dean, 1991). Labor and the poverty of labor were seen as the source of wealth and poverty as a natural condition that should not disappear for the continuation of wealth (Bentham, 2001, p. 2). The labor of the poor child is also seen as "living treasures" that should never be wasted.

As a result, childhood as a changeable social construct was just as valuable to the modern state, classical liberalism and the market it glorified, and to the household, which was economically a representation of spending and labor power; but most of the time, this value came from the state of being a labor power; until the bourgeois class and its values rise to the limit of their children. After the 18th century, while the unique and valuable feelings and privileges for the children of the bourgeoisie and the upper class and their working styles were determined within this framework (Heywood, 2006), on the other hand, the children of the lower class, the poor child's labor from the soil to the factory gates were telling us something: There were some breaks in the idea of child and childhood, and the causes and consequences of these breaks were important for this study in this context. In this context, the processes of being a child and childhood would obviously shed light on understanding child labor historically and interpreting it today. While trying to understand child labor in the historical process, the effort to understand the concepts of child and childhood, the mode of production and relations and the class issue will help us to explain and understand what happened in the history of child labor in the light of the transformation of the social one. In this sense, it is necessary to understand the intervention of the modern state in child labor on the basis of the changing mode of production and its relation, in other words, on the basis of the capitalist mode of production and relations, and the class issue brought about by this mode of production.

### **3. What About Today?: Interventions by International Institutions on Child Labor**

The policy adopted by the WB in combating child labor is based on combating the worst and most exploitative forms of child labor. It is stated that these policies will be realized through short-term, rapid-result interventions and long-term strategies. This intervention is basically based on “reducing poverty” (Fallon & Tzannatos, 1998, p. v). In this sense, the WB intends to combat child labor by reducing poverty, just like the solution proposals it brings after constructing labor as a social problem. It advocates that the worst forms of child labor can be eliminated through economic development as well as improvement and advancement in education. It is observed that the Bank's increasing interest in child labor is followed by other institutions such as the ILO, UNICEF and NGOs. In this sense, the main guiding force is World Bank (WB).

We see that the solution suggestions for the social problem and its management built by the WB are also valid for child labor. So much so that the WB states that it will carry out poverty reduction and economic and social programs to be followed in order to reduce poverty within the framework of governance with other international institutions and nation



states. In order to eliminate the “worst forms” of child labor, the Bank will develop “aid strategies” in countries and planned to “start programs by lending” and evaluated the child labor problem within the “human development web” to cover only the worst forms. In this sense, intervention in child labor is unsurprisingly reduced to combating aid programmes. the WB's solution proposal to reduce the worst form of child labor is to implement programs that reduce poverty, improve education and benefit from humanitarian services, to establish an appropriate aid system that is basically multi-thematic and to advocate the social empowerment of women as well (Fallon & Tzannatos, 1998: 18). The Bank aims to reduce child labor by reducing poverty, educating children, providing support services to working children, raising public awareness, through legal and other regulations, and other non-regulatory methods (Fallon & Tzannatos, 1998, pp. 9-13). The Bank states that it will carry out its activities in this regard, sometimes by lending to countries and sometimes without lending. Providing income-generating opportunities to poor families through social assistance projects and programs is one of the activities that it will implement by lending to countries (Fallon & Tzannatos, 1998, p. vii).

In addition, the Bank said that the hours and programs of the schools should be harmonized for children who have to work. In this sense, the Bank emphasizes that children who have to work should still work. WB says it's goal here is to reduce the cost of attending school for these children's families and to mitigate the detrimental effects of working (Fallon & Tzannatos, 1998, pp. vi-vii). The bank is openly shutting its eye on the labor of children and recommends this policy to nation states.

The WB does nothing but monitor children's use of basic education and health services and make poverty sustainable with prescriptions that offer assistance to the poor.

#### **4. Precautions and Solution Suggestions Regarding the Consequences of the COVID-19 Process for Child Labor: What Do ILO and UNICEF Say?**

COVID-19 is a health, economic and social crisis created by capitalism, and an economic crisis seems to affect the most vulnerable children in the society first. Therefore, it is very important to look at the interventions of the state and international institutions during the crisis to understand whether they really protect the poor child and their work.

ILO and UNICEF (2020, p. 1) have said that Covid 19 is a health crisis and that children can become workers in this process. They stated that the

pandemic increased economic insecurity, tightened credits, and strained public budgets. Combined, household incomes are declining, and the economic contribution of children has become critical, more children working in more dangerous and exploitative jobs may increase, and children who are already working may work longer hours and in worse conditions. At the same time, they emphasize that gender inequality may increase by attracting girls more to domestic production and working in agriculture.

In this context, it is stated that precautions should be taken. In response to Covid-19, the policy of the ILO (2020, p. 6) mainly advocates increasing the economy and employment, supporting enterprises, jobs and income, protecting workers in workplaces, relying on social dialogue for solutions; the ILO invites states, employers and trade unions to act together<sup>9</sup>. In other words, it says that the work should continue. On the other hand, UNICEF (ILO & UNICEF, 2020, p. 6) calls for international coordination so that this health crisis does not turn into a children's rights crisis and advocates the following actions:

- Ensuring that children are healthy and well fed,
- Delivering water, health and nutrition measures to vulnerable children,
- Enabling children to continue learning,
- Supporting families with their needs and childcare,
- Protecting children from violence, abuse and exploitation,
- Protecting migrant and refugee children.

In this report, the ILO says that policies addressing the root causes of child labor should be implemented in a way that covers all difficult conditions of children. However, by first emphasizing “declining living standards” (ILO & UNICEF, 2020, p. 7), it stated that poverty will also bring child labor for the survival of households. In fact, the main reason was again shown as poverty. In this sense, not only has a new understanding of the root cause of child labor been developed, but also a solution has been sought in social assistance programs; it has been said that social assistance programs play a critical role, especially in maintaining the well-being of households (ILO & UNICEF, 2020, p. 8). In this sense, the ILO and

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<sup>9</sup>It is seen that ILO's Programme on the Elimination of Child Labour in Turkey has similar targets in 2021-2025. ILO has launched a program to support its national partners, with a particular focus on child labor in seasonal agriculture, to extend social protection and support social dialogue, and to end child labor, especially in its worst forms (ILO, 2021).

UNICEF actually did not say anything different from the WB's discourse on poverty and its management.

The ILO and UNICEF (2020) list the possible interventions as follows:

- From expanding cash transfers to providing health, income, food security and employment, each country must have its own answer. In the long term, a national social protection ground-space should be established, which does not go beyond providing basic social security for children and their families (ILO & UNICEF, 2020, p. 26).
- The way of crediting the poor should be paved (ILO & UNICEF, 2020, p.27).
- Adult employment should be created (ILO & UNICEF, 2020, p. 27).
- Every child should have access to education (ILO & UNICEF, 2020, p. 29).
- Employment-labor management and enforcement should be strengthened (ILO & UNICEF, 2020, p. 30).
- The health and safety of workers should be protected (ILO & UNICEF, 2020, p. 31).
- Employees should be provided with social services (ILO & UNICEF, 2020, p. 32).

Covid-19 has initiated an important debate about public budget choices and international aid flows, and it is seen that a social aid-oriented approach has been adopted in social protection and wide-ranging poverty reduction efforts. It is also questioned whether this will work or not. In this context, it has been mentioned that in the face of the coming financial crisis, countries will have to use their financial areas, the redistribution of resources and the need to be flexible in obtaining resources, and also that external borrowing will be necessary (ILO & UNICEF, 2020, p. 20). In this sense, states and international institutions are also confused and do not have a plan on how to intervene in the budget and international aid. In addition, the downward trend in the number of children working in the worst conditions in underdeveloped countries could be sustained until another crisis of capitalism and started to increase again (ILO and UNICEF, 2021).<sup>10</sup>

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<sup>10</sup> According to the report published by the International Labor Organization (ILO) and UNICEF on June 10, 2021, the number of children working as child labor has increased

## 5. Conclusion

State intervention in child labor has been controversial throughout history. Why does the state intervene in child labor? If the state is an “embedded actor” moving between the political and the economic, is the intervention in child labor there to reduce this quantitative determination and to make some qualitative adjustments in the continuity of this quantitative situation, by seeing child workers as a numerical indicator in achieving social welfare; or, beyond these, is there a function that creates the child worker, sometimes intentionally and sometimes unintentionally?

Although it is claimed that state interventions in child labor are a "measure" regarding the problem of child labor, as in Child Labor Laws or today's vocational high schools and apprenticeship practices, it is seen that on the contrary, it can be an "incentive" to make children work. In this context, it is important to determine the results and real meaning of the state's interventions regarding child labor.

Starting from this basic question, the main dynamic that shapes the intervention of the modern state on child labor is revealed by giving historical examples of the state's interventions that only regulate child labor. In this context, it has been revealed that this dynamic is the mode and relations of production and the breaks (needs) in this mode of production. In this context, the mode of production and relations and class relations are shown as the main factor that shapes child labor. With the emergence of the capitalist mode of production, it has been emphasized that the state is an actor that intervenes in the labor market according to the needs of capital accumulation, and it has been revealed that it has a similar character in terms of child labor.

The policy recommendations of the World Bank, which produces policies on the labor of the poor child today, have been examined and it has been revealed that the WB uses the global poverty policies to build the conditions of the global market in the countries. It has been revealed that the policy adopted by the WB in the fight against child labor is based on combating the worst and most exploitative forms of child labor and is aimed at ensuring that the poor child works and that their poverty is sustainable.

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by 8.4 million in the last four years to 160 million worldwide. Another 9 million children are at risk due to the effects of the COVID-19 pandemic. The report points out that there has been a significant increase in the number of child workers aged 5 to 11, who currently account for more than half of the world's child workers. The number of children aged 5 to 17 working in hazardous work, defined as work that may harm the health, safety or morals of children, has increased by 6.5 million to 79 million since 2016.

The Covid-19 process, on the other hand, has been revealed as an example of how poor children are left alone by states and international institutions and that they have no choice but to become workers in the face of their poverty. This part actually intends to remind us that despite all the gains regarding child labor, the achievements are limited. In this context, it will be necessary to remember the capitalist mode of production and relations and the meaning of child labor for the state: the class essence of the issue and the cheap labor force in this context. Inadequate legal regulations and policies of states and international institutions that only regulate child labor have not been able to protect a child from selling his labor. For this reason, the need to abandon the policies that regulate child labor and maintain the existence of the poor child has been revealed.

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# 10

## THE RIGHT TO SELF- DETERMINATION – CHALLENGES OF MODERN INTERNATIONAL LAW (CASE OF KOSOVO)

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### *Abstract*

*The nature of public international law is very dynamic and tightly related to the political processes ongoing within the world order frame. This, in its turn, means that some concepts of public international law are interpreted differently in different decades. The concepts such as “right to self-determination”, “territorial integrity”, “people”, “minorities”, “indigenous people” and “secession” are quite often used especially after World War II, but their interpretation slightly differs from decade to decade. Given concepts were examined in the same way during the colonial process, but the precedents of the last 40 decades have changed the classical approach. The key contribution of the presented research is to offer an understanding of some mentioned concepts and analyze the existing theoretical base following the practice. The authors analyze the right to self-determination, including its development from decade to decade, key characteristics, international treaties concerning the concept, and different interpretations of the concept. Along with the theoretical review, the practical case of Kosovo is analyzed since it is widely discussed both within scientific circles and governmental authorities.*

*Keywords: Right to Self-determination, Secession, Territorial Integrity, Economic Independence, Security Threats*

### **1. Introduction**

**A**fter World War II, the concept of “self-determination” has been frequently used in public international law. It was associated mostly with concepts such as territorial sovereignty, territorial integrity, ethnic minorities, people, etc.

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**THE RIGHT TO SELF-DETERMINATION – CHALLENGES OF  
MODERN INTERNATIONAL LAW (CASE OF KOSOVO)**

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Public international law is directly related to world politics and world order. Their change more or less affects the norms of international public law and their interpretation. It means that international public law is dynamic in nature and should be as relevant to current changes as possible. The classical understanding of the universally recognized principles of public international law is different from today's reality, especially when it comes to the self-determination of the nation and its required characteristics (Jikia, 2022).

Historically, the concept of self-determination comes from the political ideas of Aristotle, John Locke, and Jean-Jacques Rousseau. But as a concept in international law, self-determination originated in Europe in the 19<sup>th</sup> century (Jikia, 2011).

The rebirth of the right to self-determination became common in the independent processes of the colonial countries after World War II. In 1960, the General Assembly adopted the Resolution 1514 (XV) which was called the Declaration on the Granting of Independence to Colonial Territories and Peoples. It said that “all peoples have the right to self-determination; under those rights, they freely determine their political status and freely pursue their economic, social and cultural development”. According to this document, the right to self-determination should include the justification of independence of “peoples”.

Even though several international treaties define the term “self-determination of nations”, there is no unified definition or approach to the named issue. Although the UN Charter used the terms “the principle of equal rights and self-determination of peoples” in Articles 1 and 55, it did not put the “self-determination” into Article 2, which listed 7 principles that the member states should follow (UN, 1945). That led to some arguments about the relationship between “the principle of equal rights and self-determination of peoples” and other principles listed in Article 2.

According to Antonio Cassese, the principle of self-determination is a goal rather than an obligation of the UN. However, there was a strong debate over the meaning of these Articles. The main point of hesitation was whether the right of self-determination refers to the states or peoples (Suesse, 2016). The UN nominated a special commission to investigate the issue. According to their explanations, the word “peoples” refers to groups of human beings who may or may not comprise states or nations. The right to self-determination implies that people have the right to establish any regime they favor.

According to the common Article 1 of the International Covenant on Civil and Political Rights and International Covenant on Economic, Social and Cultural Rights, the right to self-determination is not only a political concept but also a legal right, which is directly connected to the group called “people” (Jikia, 2011).

In these two of the most important international human rights treaties, the right to self-determination was stated as the collective right of all peoples. During the drafting of these covenants, the right to self-determination was initiated by Socialists and the Third World States, while most Western States argued that self-determination is a principle and not a right (Nowak, 2007).

The adoption of the texts of the UN covenants on human rights marked the next phase of legal development of the concept of self-determination from a legal obligation in the decolonization area, to self-determination as a human right, with two resolutions of the General Assembly serving as a bridge (Kumbaro, 2011).

The definition of the term “people” is still not clear. Many indigenous peoples believe that they should belong to “peoples” in international law. But the problem is that if the indigenous peoples could be recognized as “peoples”, and given the opportunity of self-determination, which itself includes the request for independence, it would violate the sovereignty and territorial integrity of the existing countries (Jikia, 2011).

United Nations Declaration on the Rights of Indigenous Peoples, which was adopted by the General Assembly in 2007 made a balance between territorial integrity and the right to self-determination of indigenous peoples. It claimed that indigenous peoples have the right to self-determination and under that right, they freely determine their political status and freely pursue their economic, social and cultural development. This article is almost the same as Common Article 1 of ICCPR and ICESCR. However, there is another article in the Declaration stating that “nothing in this Declaration may be interpreted as implying for any State, people, group or person any right to engage in any activity or to perform any act contrary to the Charter of the United Nations or construed as authorizing or encouraging any action which would dismember or impair, totally or in part, the territorial integrity or political unity of sovereign and independent States”.

According to the above-mentioned, the main aim of the presented research is to study the concept of the right to self-determination that is presented differently in various international treaties, to analyze the main

characteristics, and to draw some conclusions following the modern practice of the given right. Although there are different approaches to the issue of self-determination. This research will discuss the right to self-determination from the legal perspective. To achieve the research goal, it is important to study related international treaties, and resolutions and analyze how it was examined in practice, in particular, in the case of Kosovo. Research methods were also defined, in particular, the historical research method, comparative analysis, synthesis, and logical analysis. These research methods are consistently used to address the issues that are necessary to achieve the goal set out in the given introduction.

## **2. Literature Review**

For the detailed study of the topic, different literature was used, in particular, the scientific literature, as well as various international agreements and reports of international organizations.

Kumbaro's final report "The Kosovo Crisis in International Law Perspective: Self-determination, Territorial Integrity, and the NATO Intervention" reviews the development and nature of the right to self-determination, the interrelation between self-determination and territorial integrity, and NATO Intervention in Former Yugoslavia. The author thoroughly discusses international conventions and their interpretation of the concept of self-determination and territorial integrity, examining them according to different cases, such as Eritrea, East Timor, and Yugoslavia, and drawing their conclusions based on the analysis.

Clark's publication "Civil Resistance in Kosovo" discusses the development and dynamics of the conflict between Serbs and Kosovo Albanians. The author argues that war had been avoided previously because of the self-restraint exercised by the Kosovo Albanians and their policy of nonviolence. Before the Kosovo Liberation Army's taking up of arms, Kosovo Albanians had had a long history of civil resistance in the face of Serbian ultra-nationalism. The author traces the historical evolution of the Kosovo Albanians' struggle, from peaceful demonstrations to the KLA backlash, covering the 1980s to the present day. In assessing the achievements and limitations of nonviolence, Clark explains why the policy was ultimately abandoned and how it could have been made more effective. Importantly, this book draws on the lessons of Kosovo to provide suggestions for future peace-building purposes.

Borgen's article "Kosovo's Declaration of Independence, Self-Determination, Secession, and Recognition" reviews the concept of secession and the characteristics needed for the creation of a new

independent state. The author outlines the process for independence in the case study of Kosovo, political and legal issues concerning the process in question, and the forthcoming challenges.

Jikia's research, "Self-determination vs. Territorial Integrity" reviews various interpretations of self-determination and territorial integrity, discusses the main reasons and tendencies for self-determination after World War II, and analyzes the main characteristics of the given concepts and the challenges that newly born states face.

Bojovic & Burazer's publication "Agreement on Comprehensive Normalization of Relations between Serbia and Kosovo, Political and Legal Analysis" explains and offers some practical guidelines and specific recommendations for the mentioned agreement; the presented analysis goes into depth looking for possible and creative solutions. It is intended to provide recommendations that could be generally applicable. It is indeed perceived to furnish a conceptual framework for the prospective drafters of the agreement whilst taking into account the relevant political, legal, and institutional context.

Deda's article "The View from Kosovo: Challenges to Peace-building and State-building" reviews the set of challenges of Kosovo as an independent state: internal, regional, and international. The author focuses on building peace and stability in Kosovo and the role of international actors in the process.

Huysmans and Crombez's scientific paper "Making Exit Costly but Efficient: the Political Economy of Exit Clauses and Secession" presents the political economy analysis of exit from federations. Based on formal models, it can be seen how state-contingent exit penalties can induce socially efficient exit decisions: they often force the secessionist to consider the lost benefits. According to the article, the issue is very important since self-determination today is not only a political or legal concept but is tightly connected to the economy and future welfare of the newly established state.

Suesse's scientific paper "Shaping the Size of Nations: a Test of the Determinants of Secessions" attempts to fill the gap related to the empirical determinants of state formation and dissolution. Despite the rich theoretical literature, determinants are still vague. The author analyzes some regional variations in separatists' protests for the aim of the research.

### 3. Case of Kosovo

#### 3. 1. Historical Overview

In 1912, after 500 years of the Ottoman Empire's rule, the territory of Kosovo was annexed by Serbia. Throughout World War II, the Axis Alliance annexed much of Kosovo and made it a part of Albania, but after their defeat, Kosovo returned to Yugoslavia as part of Serbia. In 1974, it was granted the status of an autonomous province of Serbia. However, its autonomy was revoked in 1989. Kosovo had a population of 2 million people, 90% of whom were Albanian Muslims (Clark, 2012).

In the following years, by order of Serbia, the Albanian-language media was shut down, the teaching of the Albanian language in most schools was not possible anymore, and Albanian language studies at the University of Pristina were reduced. When the Serbian Assembly ceased to work with the Kosovo Assembly in 1990, elected representatives of Kosovo responded by declaring sovereignty. On October 22, 1991, Kosovo Albanians formally adopted a declaration of independence (Krieger, 2001).

Kosovo did not receive much support from the international community, as international attention was mainly focused on the conflict in Bosnia and Herzegovina. Accordingly, the Kosovo Albanians resorted to nonviolent resistance tactics. All this gave impetus to the formation of the Kosovo Liberal Army. In 1997, the Kosovo Liberal Army launched a series of strikes. Troops of Yugoslavia responded greatly and launched attacks regardless of age or gender. In February and March 1998, according to the statement of human rights organization, entire families of the members of the Kosovo Liberal Army (KLA) were killed (Krieger, 2001). Albanians were persecuted by Serbs on ethnic grounds. There were cases of torture of Albanians, execution, and forced displacement. About 1 million Kosovo Albanians have fled or were forcibly expelled from their homes since the end of the war in Kosovo, accounting for 45% of the pre-war population (Dobbins, McGinn, Crane, Jones, Lal, Rathmell, Swanger & Timilsina, 2003).

The territory of Kosovo was on the verge of a humanitarian crisis, which was confirmed by international organizations. The UN and the Security Council issued resolutions calling for a ceasefire on both sides and an end to all forms of violence. Serious human rights violations took place against ethnic Albanians. Diplomatic negotiations or the involvement of international organizations have failed to resolve the conflict peacefully.

In France, in particular, in Rambouillet, a conference on Kosovo was held on 23 February 1999 where the Interim Agreement for Peace and Self-Government in Kosovo was adopted. The agreement states that all citizens of Kosovo should enjoy equal rights and freedoms (UN, 1999).

The provisions of the Rambouillet Agreement concerning the definition of the mechanism of the final state of Kosovo were unacceptable to Milosevic and the Serbs. It was particularly unacceptable to the Serbian side that three years after the Rambouillet agreement, Kosovo's final status was to be determined, *inter alia* – “by the will of the people”. Based on all this, Milosevic decided to reject the Rambouillet agreement. He considered that NATO air strikes could not be an excuse to end his rule. Milosevic was unable to give up Kosovo, which Serbs considered to be the heart of Serbia (Hosmer, 2001).

The North Atlantic Alliance twice made a statement in August and September 1998 indicating that NATO would conduct military-peacekeeping operations if the military confrontation continued in Kosovo (Chitadze, 2008). Eventually, Milosevic refused to sign an agreement, which envisaged the restoration of the autonomy of Kosovo (Burkadze, 2011).

On March 24, 1999, NATO launched a military intervention that lasted 78 days. Their mission was to attack the Yugoslav Air Force, infantry, and infrastructure to force the Yugoslav Army and military forces to withdraw from Kosovo. When NATO carried out the strikes, 112 US and 102 allied state aircraft were involved in the operation, which was considered a justified step by the international community. At the international level, the ongoing events in Kosovo, in particular the oppression of ethnic Albanians by the Serbian authorities, were assessed as a crime against humanity.

### **3. 2. Challenges of Kosovo as an Independent State**

After the NATO intervention in Kosovo, there were two kinds of problems: on the one hand, the international community was moving towards decentralization, especially on ethnic grounds; on the other hand, no one foresaw the economic and social impact that it would have on an already aggravated economic, social, democratic, and education systems that had been on the verge of complete collapse (Grgic & Urh, 2004).

On June 10, 1999, following NATO's intervention in Kosovo, the UN Security Council adopted Resolution 1244 on Kosovo, which stated that it was determined to resolve the dire humanitarian situation in Kosovo,



and to ensure the peaceful and free return of refugees and displaced persons to their homes; it condemned all forms of violence against the people of Kosovo, as well as all forms of terrorist acts organized by any party (UN, 1993).

Those who drafted Resolution 1244 believed that any attempt to determine the final status of Kosovo would only destabilize the region, as the majority of the population would receive nothing but independence (Borgen, 2008). Neighboring countries, such as Albania, are categorically opposed to such developments. By raising the issue of the final status of Kosovo, the international community could have promoted democratic transformation in Belgrade and the region's integration into the European Union and NATO (Dobbins *et al.*, 2003).

One of the main issues, along with legal and political factors, which should be considered during the secession is exit clauses that may be vital for the newly formatted state. Of course, exit costs depend on the model of exit (Huysmans & Crombez, 2020).

### **3. 2. 1. Public Administration Challenges**

In the summer of 1999, the UN Security Council established the 50,000 Kosovo Armed Forces (KFOR) based on NATO members and the United Nations Interim Administration Mission in Kosovo (UNMIK). The UN Interim Administration has divided public security in Kosovo into three parts: the International Civilian Police, the Local Kosovo Police Service, and the Kosovo Armed Forces. UNMIK has also established an impartial, independent, and multi-ethnic judiciary system (Jones, Wilson, Rathmell & Riley, 2005). UNMIK received support from the government, non-governmental organizations, the Council of the European Union, and other institutional and national representatives who jointly sought to establish a state despite Kosovo's lack of legitimacy. They simply created fragile statehood and a government that did not live up to the expectations of a new sovereign state (Daxner, 2010).

One of the main challenges for justice was the backlog of litigation. In 2002, for example, 33,538 accumulated civil and criminal cases of previous years were transferred. In 2003 - 61,713 cases were transferred from previous years. The total number of cases in 2003 was 249,695, of which only 167,795 cases were completed and the remaining 81,900 cases were transferred by 2004. That is why in 2002-2004 the backlog of cases increased by 144% (Jones *et al.*, 2005).

In February 2008, the Council of Europe mandated the launch of the European Union Rule of Law Mission in Kosovo (EULEX), the largest civilian mission under the EU's Common Security and Defense Policy (Chivvis, 2010). The EU has focused on the rule of law, which in part reflects the EU approach to post-conflict reconstruction. It also focuses on EU member states that consider Kosovo to be a hotbed of international criminal networks and trafficking (Chivvis, 2010).

The main problem faced by the EU Rule of Law Mission in Kosovo was the reaction of those EU member states that did not recognize the independence of Kosovo. It is true that they supported the mission but sought to ensure that the mission did not support the independence of Kosovo. Official representatives of the mission provided only technical support for institutional development, regardless of whether Kosovo was an independent state or not (Chivvis, 2010).

By 2010, Kosovo had at least four competing legal codes, namely the Kosovo Code, the UN Mission in Kosovo Code, the Serbian Code, and the Old Code of Yugoslavia. The European Court of Justice should have chosen which Code to follow in its proceedings. This choice had a purely political character (Chivvis, 2010).

The internal developments in Kosovo after the declaration of independence went through three short-term phases during the first three years:

- the so-called Honeymoon in 2008;
- the period of coming out of illusions in 2009;
- the struggle for internal democracy, development, and accountable institutions in 2010.

The people living in Kosovo were not given a break from the question of what kind of state Kosovo should be. The problem for the political elite was that they were confused about the two main issues of the form of government of Kosovo. First, as long as the Kosovo government complied with the requirements of the international community, the various internal aspects of the governance in Kosovo would not be discussed and no questions would be asked. Second, the Kosovo elite realized that they would not be fined for mismanagement of state finances until the government complied with key requirements of the international community.

The autocratic tendencies of the Kosovo government have been increasingly criticized by a small number of independent media outlets and several non-governmental organizations. The civil society sought to assert its place in the country and continued to fight to uphold democratic standards and principles. By 2010, the nation was undergoing a kind of transformation that other countries had undergone in the late 1990s and early 2000s (Deda, 2010).

Until the end of 2009, the main focus of international representations was on multiethnic relations. In fact, after the independence of Kosovo, the Kosovo Albanians did not see the Kosovo Serbs as a threatening force for the future destabilization of the country. Serbs immediately felt a safe environment and freedom of movement, which facilitated relations between the two peoples, the exception here was northern Kosovo (Deda, 2010).

The existence of parallel municipalities of Serbia in Serb-populated areas of Kosovo may have been one of the obstacles to the proper functioning of the new municipalities. Although Serbs had more financial benefits in terms of working in parallel structures on high salaries, they could not offer development and their offer did not meet the opportunities offered by Kosovo. At the same time, Serbia allocated 42 million euros for parallel structures. Serbia did not intend to change its policy regarding the involvement of the Serbian population in the political institutions of Kosovo. The Serb-controlled municipalities of northern Kosovo did not cooperate with the new state agencies. The 2010 budget of Kosovo provided EUR8 million for these municipalities. At the end of 2009, the Kosovo government and the International Civilian Bureau jointly developed a strategy for the integration of northern Kosovo (Deda, 2010).

There are various notable aspects among other problems existing in Kosovo. For example, there are several criteria, which must be met by any country wishing to join the European Union. Objectively speaking, Kosovo faces many obstacles. Even when discussing the status of Kosovo in Brussels, officials insisted on the "adoption of standards before gaining the status", led by Michael Steiner, the head of the third UN mission in Kosovo. However, it became clear that the standards would not be met soon. At the same time, 23 out of 28 EU states recognized the independence of Kosovo, while the other five countries (Cyprus, Greece, Romania, Slovakia, and Spain) did not intend to recognize it due to their internal problems (Radeljic, 2014).

Serbia and Kosovo expressed opinions on their commitment to reach an agreement on the normalization of relations. A large part of the

international community has expressed full support for this. Some Western authorities, as well as the European Commission, declared that any agreement reached between the two sides is acceptable in resolving the dispute, which responds positively to the possibility of territorial change as part of the normalization process (Bojovic & Burazer, 2018).

The normalization of relations between Serbia and Kosovo was one of the main political issues in the Western Balkans. The European integration of Serbia and Kosovo has been a major issue throughout the region. The EU-sponsored dialogue between Belgrade and Pristina began in March 2011. It is also known as the "Brussels Dialogue". The basis for this dialogue is the above-mentioned Resolution 64/298 of the UN General Assembly. In the first phase of the dialogue, the negotiating parties were not high-ranking representatives of the state, and this dialogue was only about technical issues. Following the 2012 parliamentary elections of Serbia, the two governments moved the talks to a "political rank" where the prime ministers of the two countries met. An important stage of this phase was the "Brussels Agreement" on the principles of normalization of relations (Bojovic & Burazer, 2018). The 15-point agreement was signed in 2013. The document states that associations of municipalities would be established on the territory of Kosovo, which was to be joined by the Serbs living in Kosovo; under the European Charter of Self-Government and the Legislation of Kosovo, municipalities were given the right to exercise collective governance through associations (EU, 2013). However, this agreement did not work. The two sides blamed each other for the lack of progress. The European Union has set January 2014 as the date for the start of EU accession talks with Serbia. Kosovo ratified the Stabilization and Association Agreement with the EU in 2015 (Bojovic, 2018). Article 60 of the Declaration of the NATO Brussels Summit 2018 states that the representation of NATO in Kosovo contributes to the creation of a secure environment through close cooperation with the Kosovo authorities and the European Union. The North Atlantic Alliance will continue to develop security organizations in Kosovo, which takes part within the frameworks of the existing mandate of the NATO Advisory Team. Bilateral interaction with Kosovo is successfully carried out through dialogue and practical cooperation. NATO welcomes the aspirations of Kosovo to improve the security of its people, as well as the security of the Western Balkans (NATO, 2018).

### 3. 2. 2. Security Challenges

One of the UNMIK representatives, Michael Daxner, writes that the playing "statehood" game in Kosovo was a fundamental understanding of the processes that were happening in the UN. They designed state

governance for a real state, but it was an experiment that took place under vague conditions.

There were three fundamental challenges concerning security in Kosovo. It was organized crime, corruption, and ethnic discrimination. First, the security services had to deal with the issue of trafficking concerning organized crime – there was a significant increase in the forced prostitution of women and children. The trafficking of drugs and weapons was also a significant challenge for security services. The second fundamental problem in the security of Kosovo was the corruption of state officials. Organized crime and bribery were linked in Kosovo. Organized crime, for example, was linked to former members of the Kosovo Liberal Army and existing political parties who were forcing judges and prosecutors to take bribes.

The third fundamental issue of security was the coexistence of ethnic Albanians and Serbs in Kosovo (Jones *et al.*, 2005). In this regard, Belgrade developed a plan to create an "autonomous region" for the Serb population in Kosovo. According to the plan, the political autonomy of the region was to be established following the principles of subsidies and decentralization, which would be in political relation with Belgrade. According to the Belgrade plan, IDPs and displaced persons were the focal points. The Serbian plan was based on the concept of the Council of Europe's recommendation for the decentralization of Kosovo, but the recommended policies and basic principles should have been close to each other. Belgrade has taken serious steps toward Kosovo's ethnic secession (Grgic & Urh, 2004). Kosovo Albanian politicians did not have the slightest desire to defend fundamental human and civil rights in favor of non-Albanian ethnic groups. For 5 years since 1999, an ethnic apartheid system had been established in Kosovo under the supervision of NATO and the United Nations. Such a situation would completely absolve the Kosovo leadership of its responsibility to protect the security of non-Albanian ethnic groups. The international community should continue to monitor security and play a major role in governing Kosovo. Five years after the NATO intervention, double standards and empty talk were not giving grounds for optimism. If Kosovo continued to decline, it would become the apartheid anomalous state of 21<sup>st</sup>-century Europe (Bardos, 2004).

#### **4. Conclusion**

Even though Kosovo unilaterally declared independence in 2008 following a majority of states recognizing it as an independent state, Kosovo still faces many challenges.

The UN Interim Administration in Kosovo (UNMIK), with the help and assistance of the government, NGOs, the Council of the European Union, and other institutional and national representatives, jointly, sought to establish a state, which turned out to be a major challenge for the UN as it was a try to establish and operate a whole new state. Establishing and managing the area destroyed by the conflict as a state required enormous efforts in all directions.

Serbia created additional resistance in Kosovo. It allocated EUR 42 million for the proper functioning of parallel municipalities of Serbia in Serb-populated Kosovo territories. The Serb-controlled municipalities of northern Kosovo did not cooperate with the new state agencies. Although negotiations between Serbia and Kosovo on normalizing relations have been ongoing since 2011, no significant agreement was reached.

Although Kosovo has become an independent state and has gained the recognition of a majority of UN member states, it has been going through a rather difficult and controversial path for years. The fact is that international legal recognition a priori does not mean the resolution of problems that still exist in Kosovo.

Apart from the issues discussed above, a threat that the Kosovo campaign could set a dangerous precedent in international law still exists. Despite great efforts to set this event as a precedent, the Kosovo campaign was truly an exception. Although this campaign has been described as a dirty deed, it served its purpose: stopping the killing of tens of thousands of Kosovo Albanians and the process of expelling them from the country.

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# 11

## ROBOTICS IN THE RENEWABLE ENERGY INDUSTRY SECTOR - REVIEW

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### ***Abstract***

*Robotics is an emerging technology with an increasing role not only in manufacturing, but also in the renewable energy market. This study provides an outlook of the use of robotics in the renewable energy industry sectors. The segmentation of robotics by type and application is addressed, whereas by region is dealt in the growth and projections of the robotics market. The study provides the advantages and disadvantages of the usage of robotics in the renewable energy. Increasing concerns about Waste from Electrical and Electronic Equipment (WEEE) and policies to move to circularity as found in literature are presented. The circular economy, as a solution to reduction of WEEE, leads to finding ways of making e-waste reusable and recyclable. Because the focus of not only governments, but also household is to shift from fossil fuels to renewable energy, automation and robots are replacing the traditional jobs and are present now more than ever in the industry. There are many benefits in the use of robotics, and sometimes even change the whole industry sector – like use of robots in wind power industry to make it less expensive and more productive. This study pinpoints that robotics plays a critical role in enhancing the renewable energy industry sector and is becoming a critical factor to the sustainability and survival of the energy industry. We provide an outlook of robotics market; continue with transitioning to low-carbon emissions through renewable energy, tackle raw material issues surrounding robotics production, carry on with projections for years 2030 for robotics demand and conclude with remarks and conclusions. This study will be a good provision to the existing literature.*

*Keywords: Robotics, Renewable energy, E-waste, Circular economy, Raw materials,*

*JEL Codes: Q20, Q40, Q50, O13, O14*

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## 1. Introduction: Robotics Outlook

The shift from fossil fuels to renewable energy has expedited companies that manufacture solar panels to turn heavily toward automation. With robots replacing humans in many fields, technology is advancing rapidly, but not to the required level yet. Thus, in this market, robotics is expected to attest robust progression due to the increased need for automated solutions, increasing demand for green power, and increasing investments in research and development of robotics (Sharma, 2021). Moreover, the current president of United States of America, President Biden, developed the Build Back Better plan and allocated \$2 trillion to the clean energy sector (QYResearch, 2022). This framework is developed with the intent to set the United States on course to meet its climate targets, achieving a 50-52% reduction in greenhouse gas emissions below 2005 levels in 2030 in a way that grows domestic industries and good, union jobs — and advances environmental justice (The White House, 2021). For this reason, many scientists and environmental engineers are joining renewable energy equipment with robotics and artificial intelligence to increase the productivity and ease of access.

Figure 1: Segmentation of robotics in renewable energy market.  
Adapted from (QYResearch, 2022)



There are many ways to segment robotics in the renewable energy sector, mainly due to the interests of the research study. Due to the fact that this area of research is quite novel, the segmentation of robotics in the renewable energy market in this study follows the division conducted by QYResearch, which is leading in providing market research and has published in 2022 the report named “Global Robotics in Renewable Energy Market Size, Status and Forecast 2022-2028”. Thus, according to this study, robotics in renewable energy market is segmented by type, application, and by region. In the following sections the segmentation by type and application is provided as seen in literature. The segmentation by

region is not explicitly discussed in the section due to the lack of available information.

### 1.1 Segmentation of Robotics by Type

The difference in the segmentation by type is the following:

- The manipulation robotic system is the most extensive system used mainly in manufacturing industry and they come in different forms. The idea behind this nomenclature is that these types of robots are the ones that physically network with the entities in the area and modify them by doing different types of work like grabbing objects, opening doors, doing the packaging process, pushing and throwing and much more. All these actions require robots to plan and control the motion of their hands and arms in an intelligent way (Dogar et al., 2021).
- Mobile robotic systems are named the robots that move around in the environment. They are usually programmed and use artificial intelligence in an automated or controlled platform to do specific tasks, like moving goods around, do transportation or complete multifaceted duties. The motion of the system can be controlled autonomously and might have a pre-programmed destination from where the system might load or unload automatically (Types of Robotic Systems and System Classifications, 2009). They are called mobile because of the possibilities they have to fly, swim or run which other categories do not pose.
- The data acquisition robotic systems are those systems that are generally work to gather, process and communicate data they have gathered for the purpose of creating different indications to be able to measure or control features of objects in the corporeality. Generally meant for activities that require less human participation, a control robotic system generates signals that can be used for controlling other robots (Izagirre et al., 2022).

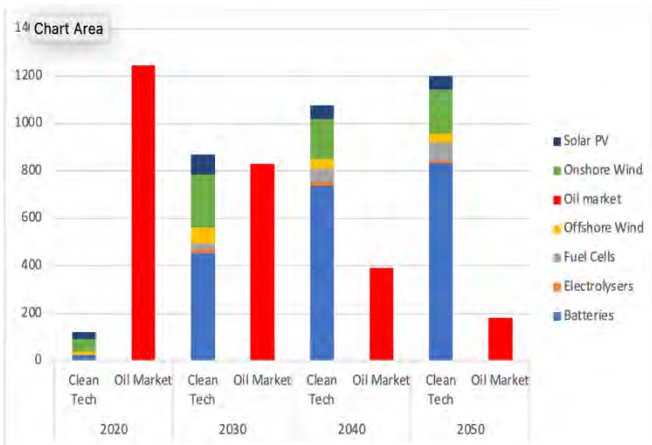
### 1.2 Segmentation of Robotics by Application

The *segmentation by application* is divided in terms of the ways the energy is derived.

- I. *Solar energy* segmentation is term that covers the energy created by using the Sun's radiation and converting the sunlight into

electrical energy. Unmanned aerial vehicles (UAVs) and robots are automating tasks in the solar energy manufacturing, which improves efficiency and productivity (Sharma, 2021). Because robotic machines can conduct bigger tasks, it has an effect in reducing the labor force, thus eliminating jobs and increasing efficacy. The productivity of workers is also higher with the use of robotic. Robots can replace people in during the building, installment, and repairment of solar panels. Newer, self-cleaning, solar-powered robots are created to tackle the issue of the decrease of absorption of sunlight due to dirt and damage to the panels. Not only they increase the capacity of solar panels, but they also work without water. They can work in the night without the need of being powered, and remove dust, sand, debris with air or their microfiber fabrics. This large-scale cleanup occurs without the use of water, human operators, or electricity. As a result, millions of gallons of water are saved (Danyal, 2022). An estimation of IEA (International Energy Agency) is that currently 80% of consumed energy worldwide is from fossil fuels, but with the incentives of more that 1 trillion USD for renewable energy, the producers of wind turbines, solar panels, batteries and fuel cells is increasing. This is comparable in size to the current global oil market (IEA, 2021). Figure 2 below shows the planned increase in the use of clean energy sources, thus the possibilities for manufacturers are high in this regard.

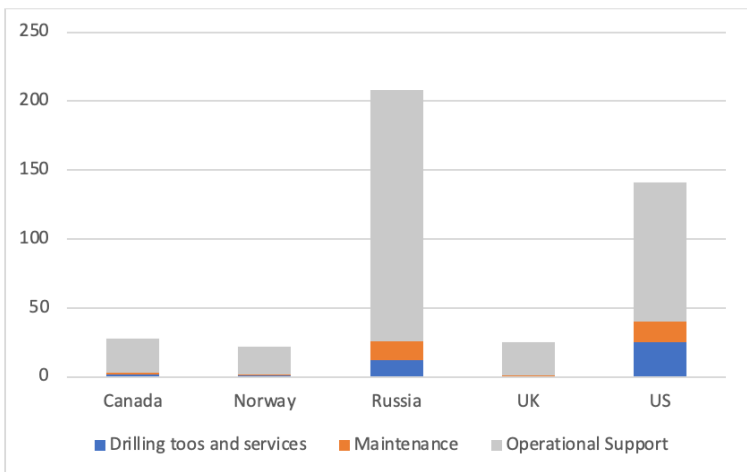
II. *Figure 2: Estimated market sizes of oil and selected clean energy technology equipment in the Net Zero Scenario, 2020-2050.*



Source: Adapted from (IEA, 2021)

- III. **Geothermal energy** refers to energy created from the heat within the sub-surface of the Earth. This heat is handled to produce electricity by turning turbines. The fossil fuels on the other side are being still used, especially coal, oil and natural gas. They have been around and powering humans for more than 150 years now. Nonetheless, the possibility of using heat from the earth's crust is constant. Therefore, it can never run out (WhatNext, 2021). Robotics plays a vital role in this type of energy production especially in the drilling process (Badhri Dhanekar, 2013). Oslo-based consultancy Rystad Energy sees the potential for robots and automation to replace up to 400,000 roles in North America, Europe, and Russia by 2030 (Jakobs, 2021).

*Figure 3: Potential headcount reduction due to automation –  
Number of employees in thousands.*



Source: Adapted from *Rystad Energy Cost Solution*. (RystadEnergy, 2021)

- IV. **Wind energy** is created by the wind that turns the turbine and convert the energy into electricity. Wind farms are very expensive, and not very profitable compared to the other renewable solutions. The high cost of maintenance, especially fixing the broken blades makes a major drawback for this type of renewable to be used, especially since the production of wind blades is usually manual (WhatNext, 2021). Robotics use in this segment confronts these issues, first by automating the process of production, and second using robots to crawl the blades and inspect them for damage for early detection that would

reduce/eliminate replacement, example Sandia robots (Meub, 2019).

- V. *Biomass Energy* is referred to the electricity created by harnessing the energy of living things. Up to date there is not much literature nor endeavors to enhance this type of energy creation. The 2009 project by Robotic Technology Inc. and Cyclone Power Technologies, called EATR, create a robot that consumed grains and vegetables that were dense in biomass to turn them into electricity, but it was cancelled due to the worry that it would ingest human remains (Novak, 2015; Robotics Technology Inc., n.d.). Another reason why we don't see this type of energy being promoted, is that it is not entirely clean energy, and its broad use could entail possible deforestation.
- VI. *Hydropower Energy* uses natural flow of moving water to generate electricity and is one of the oldest and largest sources of renewable energy. Robotics use in the hydropower energy is increasing in these recent years. Mainly robots and drones are used for carrying out inspections especially in areas that pose threat to human beings, as well as inspect water pipes from inside and provide feedback on the condition. (Enel Green Power, 2022).

## 2. Drawbacks and Advantages of Robotics use in Renewable Energy Market

### 2.1 Drawbacks for the use of Robotics – the Rise of WEEE Concern

In the renewable energy market, the need for deployment of robotics is in rise. Main reason behind this expansion of automation and spread of deployment of robotics lies in the increasing adoption of renewable energy equipment manufacturing, especially for solar PV, wind power, geothermal power, biopower and hydroelectric energy. The initiatives taken globally to increase dependencies in green energy resources lead to increase of adoption of green technologies, and facilitate the green bond financing, tax incentives on related technologies and government intervention that will reassure manufacturers to deploy robotics in their production processes (Technavio, 2018). However, this does come with a cost. The use of robotics as a partner in the renewable energy production is twofold. Except for a driver in the enhancement of the renewable energy industry sector, it also poses the environmental negative externality – i.e. leading to the excessive production of technology, leading to increase in the Waste

Electrical and Electronic Equipment (WEEE). WEEE is growing exponentially, leaving many toxic materials not properly treated in landfills. The increase of technology development thus takes a toll in affecting our ecosystem (Hartmann et al., 2021),

WEEE in particular represent a rapidly growing fraction of our garbage, accumulating in over 100 000 tons per day (Baldé et al., 2017). There are hardly any e-waste statistics, and the few available have been overused and are worn out (Forti et al., 2020). WEEE generated in 2019 amounts to more than 16 kg per capita in Europe, and this data only accounts for less than 50% of e-waste that is documented for this year only (European Commission & Joint Research Centre), 2020). Additionally, the unsustainable use of rare and often toxic materials poses an environmental threat when released into nature due to improper treatment or landfilling (Awere et al., 2020). E-Waste, or tech disposables are on the rise and filling landfills as well. This has led to creation of safer human-machine interactions, swarm robotics and unstrapped independent operations that are usually stirred by the miscellany found in nature (Yang et al., 2018). The currently emerging forms of soft, biologically inspired electronics and robotics have the unique potential of becoming not only like their natural antitypes in performance and capabilities, but also in terms of their ecological footprint (Hartmann et al., 2021). The legislations in place are also looking to use the WEEE for the purpose of recycling and reusing, thus leading to a long striving circular economy (Abazi Chaushi & Chaushi, 2022) that will make sure that we do not only take from nature, but also provide something in return. Many authors are looking at ways of reusing WEEE, developing models, devices and recycling workshops that will ease this process by producing not only newer but different usable technologies (Chakraborty et al., 2022; Li et al., 2022; Xiao & Wang, 2022).

Table 1 shows the WEEE in European countries through years in kilograms per capita in more than 30 countries. Eurostat collects this type of data to observe the compliance of European countries with the quantitative targets the European Union has set in terms of collection, preparation for reuse and recycle, as well as recovery of WEEE set out in Article 7 (collection rate) and Article 11 and Annex V (recovery targets) (Waste from Electrical and Electronic Equipment (WEEE), n.d.).

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Blerta Abazi Chaushi, Agron Chaushi

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*Table 1: Waste electrical and electronic equipment (WEEE) by waste management operations in Europe. Authors own work.*

TIME	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
European Union - 27 countries (from 2020)	NA	NA	5.88	5.74	5.87	5.96	6.45	NA	NA	NA
Belgium	9.15	9.34	10	10.08	10.36	9.92	9.67	10.69	9.77	10.77
Bulgaria	4.45	6.05	5.28	5.16	4.67	5.73	8.19	7.89	6.68	3.22
Czechia	5.42	4.98	5.22	4.94	4.78	5.23	6.77	9.49	9.06	7.82
Denmark	14.98	14.8	15	13.44	12.62	12.33	12.03	12.05	11.7	11.77
Germany	9.44	8.84	8.06	7.72	7.65	7.6	7.63	8.63	9.13	9.32
Estonia	3.53	4.19	4.93	4.06	3.04	3.57	4.22	4.76	5.57	5.87
Ireland	8.37	8.06	7.55	7.51	7.19	8	8.47	9.4	9.6	10.76
Greece	5.66	4.01	3.59	3.25	3.36	4.02	4.42	4.84	5.08	5.28
Spain	2.7	3.19	3.09	3.13	4.33	3.79	4.61	4.95	5.63	5.96
France	5.76	6.43	6.88	6.92	6.92	7.41	8.64	9.99	10.18	11.18
Croatia	NA	NA	2.27	2.27	2.12	2.86	4.76	8.42	8.21	8.9
Italy	3.67	4.28	4.2	3.69	3.47	3.52	4.08	4.27	4.54	4.8
Cyprus	2.82	3.11	3.13	2.82	2.6	2.61	3.46	2.96	5.27	2.92
Latvia	1.95	1.99	1.89	1.88	2.37	2.43	2.23	2.47	4.77	5.15
Lithuania	2.16	2.85	3.78	4.48	5.2	7.16	5.34	4.22	4.34	4.74
Luxembourg	9.51	9.36	9.56	9.38	9.47	9.84	10.22	10.46	10.17	9.98
Hungary	4.64	3.86	3.47	4.28	4.85	5.06	5.26	5.89	6.39	6.67
Malta	1.41	3.36	3.18	2.85	2.84	2.88	3.8	4.56	5.26	5.73
Netherlands	6.19	7.28	7.45	6.97	6.55	7.95	7.81	8.27	8.86	9.39
Austria	8.96	8.72	8.91	9.09	8.96	8.98	9.13	9.51	12.9	13
Poland	2.66	2.8	3.56	4.35	4.3	4.29	4.99	5.66	5.98	0
Portugal	4.23	4.41	5.53	4.06	4.74	5.77	6.17	0	0	6.49
Romania	1.66	1.15	0.96	1.04	1.55	1.5	1.79	2.19	2.3	2.49
Slovenia	3.82	4.03	4.38	4.3	3.88	4.1	4.41	6.37	5.87	6.21
Slovakia	4.07	3.96	4.25	3.99	3.92	3.89	4.01	4.7	5.01	5.39
Finland	9.53	9.11	9.23	9.25	9.78	11.18	9.84	9.71	9.95	10.27
Sweden	15.39	15.88	17.65	16.58	17.31	13.63	12.2	13.97	12.25	12.16
Iceland	2.55	4.29	5.32	6.35	4.97	6.52	8.82	9.72	12.15	11.07
Liechtenstein	1.72	1.7	4.35	3.81	7.85	8.27	11.42	13.91	12.37	15.26
Norway	15.36	15.8	16.58	15.06	14.19	14.92	14.14	13.63	12.29	11.32
United Kingdom	7.35	7.38	7.89	7.67	7.4	7.86	10.06	14.66	13.04	12.16

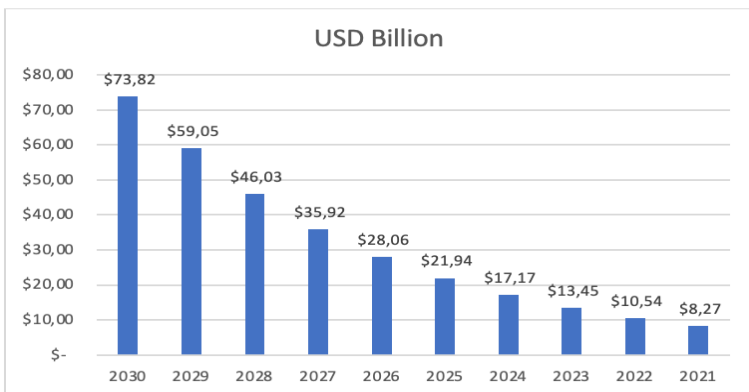
Source Data from Eurostat

## 2.2 Advantages of Robotics use in Renewable Energy Market

While many are looking into reduction and reuse of WEEE, robotics on the other side continues to show that it is a worthy collaborator in the renewable energy industry. Moreover, it is turning out to a critical factor in the perseverance and existence of the energy industry. This technology is multifaceted allowing for precision, repeatability, reliability, productivity and intelligence, consequently supplying its services in diversified tasks ranging from manufacturing, assembling, and installation to inspection and maintenance of renewable resources (Iqbal et al., 2019). Robots are being used in a vast number of efforts and provide plentiful advantages such as increased productivity and efficacy in production ecosystems as well as other applications. Integration between robots and renewable energy sources is evident, and the renewable energy industry can benefit from utilizing robots in the execution of renewable energy-related tasks (Hassan et al., 2020).

Robots have a multi-disciplinary nature, and it is because of this that they pose “precision, repeatability, reliability, productivity and intelligence, thus rendering their services in diversified tasks ranging from manufacturing, assembling, and installation to inspection and maintenance of renewable resources” (Iqbal et al., 2019). Example can be taken from UK that has set plans to increase offshore wind capacity from 22GW to 154GW by 2030 by looking to robotics and artificial intelligence (RAI) in order to tackle lifecycle service barriers as to support sustainable and profitable offshore wind energy production (Mitchell et al., 2022). Robotics is the next imperative for renewable energy creation and low-carbon emission.

Figure 4: AI in Renewable Energy Market Size 2021 to 2030.



Source: Adapted from (Precedence Research, 2022).

According to Precedence Research, the global artificial intelligence (AI) in renewable energy market size is projected to surpass around US\$ 75.82 billion by 2030 (Precedence Research, 2022). This increase in AI and digitalization of energy sector will have tremendous impact on the use of robotics in the future, mainly due to many benefits they provide to this sector. During the next 10 years, artificial intelligence and robotics are assumed to push 70% of GDP growth. Since robots usually are programmed by artificial intelligence that use information from different sensors (brightness, noise and taste, as well input from other robots), their importance and the relevance of the information they provide will be of immense importance to all manufacturers. By 2030, AI will contribute an estimated \$15.7 trillion to the global economy, more than the current output of China and India combined. (Horner, 2022; PricewaterhouseCoopers, 2017). A study conducted by Forbes, shows that around 40% of leaders are still not in the desired level to technology acceptance, but still 62% of them are creating plans to deploy and implement smart automation and connected machines. Moreover, according to the study, around 16% of leaders are already in the process of investment and performance. Robotics in renewable energy market is expected to grow from USD 2.7 billion in 2017 to USD 11.6 billion by 2025, at a Compound Annual Growth Rate (CAGR) of 22.1% (Sharma, 2021). The European Green deal agenda, US Build Back Better framework, as well as UN Sustainable Development Goals, are all putting an effort to enhance the move from fossil fuel to renewables, from traditional economy to circular economy, reducing the carbon footprints, as well as finding ways to foster open innovation (European Commission, 2021; The White House, 2021; UNDP, n.d.; Wind River, Forbes, 2021). They are all drivers of adopting the robotics in renewable energy industry.

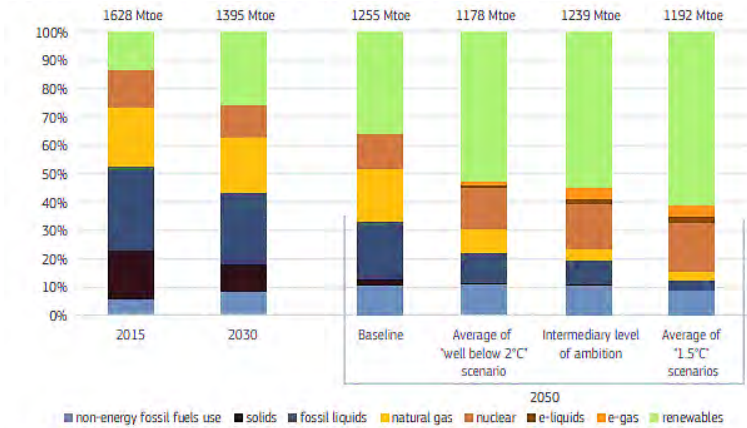
### **3. Transition to Low-Carbon through Renewable Energy Sources**

The transition to a low-carbon society requires a deep transformation, enabled by rapid adoption of new energy technologies (Neij & Nemet, 2022). This transition will come with a large-scale deployment of renewable technologies such as wind and solar PV (Sovacool, 2021). By 2050, more than 80% of electricity produced in the EU is expected to come from renewable energy sources, with electricity providing for half of the final energy demand in the EU, see Figure 5, (European Commission, 2021; Tsiropoulos et al. 2018).

Many technologies are used to convert the renewable resources into electricity (e.g. wind turbines and solar panels), store this energy (e.g. in rechargeable batteries), improve the manufacturing processes (e.g. through robotics and 3D Printers) and facilitate the conversion and transmission of

the electricity via smart grids (e.g. using digital technologies) (European Commission & Joint Research Centre), 2020).

*Figure 5: Gross inland consumption of energy in the EU for various timelines and scenarios.*



Source:(European Commission, 2021)

Digitalization, innovation in robotics and additive manufacturing promote the spurt of the renewable energy sector. Digitalization is key enabler of the transition to clean energy through improving the safety, productivity, accessibility, and sustainability of energy systems, for instance by facilitating grid management and operation (Scharl & Praktiknjo, 2019).












Robots and automation are expected to increase their share in the production of renewable energy generators, enabling industry to save time, increase productivity and optimize performance (Pellicciari et al., 2015). For example, “robotic automation is already used in solar systems for manufacturing silicon ingot, silicon modules, solar cells and silicon wafer and in wind turbines for welding certain structural components, in sharpening the edges of gears and handling the turbine blades” (European Commission & Joint Research Centre), 2020).

In the next section we give an outlook of the supply chains of the robotics technologies used in the renewable energy as a strategic sector.

### 3.1 The supply Chain of Robotic Technologies – Regional Segmentation

Robotics is an emerging technology with an increasing role in future manufacturing, as well as energy technologies. Around 44 raw materials are relevant to robotics, of which the EU produces only 2%. China is the major supplier of raw materials for robotics with 52%, followed by South Africa (15%) and Russia (9%). Inversely, as seen in Figure 6 below, EU remains strong as a player in the field of processed materials with 21%, and assemblies of robotics with 41% of the global supply (European Commission & Joint Research Centre), 2020).

*Figure 6: Supply risks for the EU and EU shares of production. Source: Adapted from (European Commission & Joint Research Centre), 2020)*

Technologies	Raw materials	Processed materials	Components	Assemblies
Robotics	 2%	 21%	 4%	 41%
Drones	 13%	 27%	 13%	 9%
Digital Technology	 9%	 54%	NA	 34%

In digital technologies, a lot of elements of the periodic system are found, but most particular ones with a predominance in consumption are elements like copper, gallium, germanium, gold, indium, PGMs, rare earths and tantalum. China (41%) and African countries (30%) are dominant suppliers. Europe is largely dependent on other countries (mainly from South-East Asia) for high-tech components and assemblies (European Commission & Joint Research Centre), 2020).

For robotics, securing access to raw materials and improving the capacity for components as well as providing a skilled work force will allow the EU to maintain a competitive position on the global market; Diversifying materials supply as well as R&D investments are vital to keep the current strong position (European Commission & Joint Research Centre), 2020).

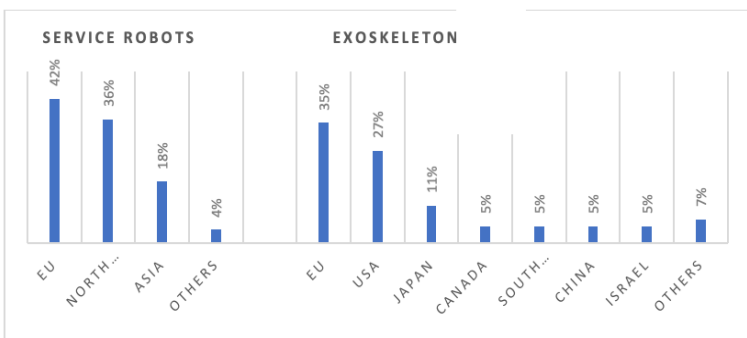
### 3.2 Robotics – the Raw Materials Issue

Robotics is an emerging technology with considerable capability for numerous purposes in industry, agriculture, medicine, transportation, social services, the military, space exploration and undersea operations (Dario et al., 2005). Based on the function and area of applications, the market for robots is categorized into two major segments, that is the industrial robots (accounting for 80% of the current market) and service robots (20% of the current market, with almost half being robots for

logistics) (European Commission & Joint Research Centre), 2020). It was expected that service robotics will displace industrial robotics in terms of sales and market value over the past two decades (Luk et al., 2006). Novel materials allow components to become smaller and lighter. For instance, the development of innovative materials (e.g., vanadium-based materials) could contribute to the creation of miniaturized, multifunctional motors and artificial muscles (Brocker et al., 2022). More efficient robot designs require multifunctional materials, integrating processes such as sensing, movement, energy harvesting and energy storage. Such materials can change over time to adapt or heal. Recyclability and self-healing properties are therefore critical in the future design (Tutika et al., 2021).

The situation with the raw materials in Europe is interesting. A stu conducted by the European Commission and Joint Research Cen concludes that a total of 44 raw materials are relevant to robotics. Europe Union is fully dependent on the supply of 33 materials, having China the main provider of raw materials for robotics (52%), followed by Sou Africa and Russia. EU produces only 2% of the raw materials, which is very low. However, these three countries pose a risk for EU if only dependent on them. So its good that nearly 25% of the materials in a global level for robotics are supplied by numerous smaller countries. This offers prospect to diversify the supply of raw materials for production, especially in the supply of industrial and service robots, where is strongly positioned (See Figure 7 below).

Figure 7: Country production share of service robots and exoskeletons.



Source: Adapted from (European Commission & Joint Research Centre), 2020)

#### 4. Growth and Projections for yYear 2030 of Robotics Demand

The global robotics market size was valued at USD 12,153.1 million in 2020 and is expected to reach USD 149,866.4 million by 2030, with a

compound annual growth rate (CAGR) of 27.7% from 2021 to 2030 (Valuates Reports, 2022). The global Industrial Robot market size is projected to reach USD 14840 million by 2026, from USD 11.720 million in 2019, at a CAGR of 6.6% during 2021-2026. The global Service Robotics market size is projected to reach USD 52.100 million by 2027, from USD 14.960 million in 2020, at a CAGR of 19.0% during 2021-2027 (Valuates Reports, 2022). Although the market for industrial robots is expected to experience slower growth in the automobile industry, the rising demand for automation in other manufacturing industries is creating a strong push for industrial robot manufacturers to diversify their portfolio further (The Business Research Company, 2018).

According to robotics industry representatives, there is huge potential for growth in the service robots' market, in contrast with to the more mature industrial robot's industry, which has more competitors, less profit differentiation and tighter profit margins (Valuates Reports, 2022).

Industrial robots can significantly improve the manufacturing energy intensity. This effect works through technology improvement effect and technological complement effect. Wang et al, in their study show that there exists heterogenous nexus between industrial robots and manufacturing energy intensity (Wang et al., 2022).

Modern societies are driven by energy, thus making it very important. New investments in areas as robotics are critical to supply an efficient power generation and energy conversion and to deliver energy security meeting clean goals at the same time (Dormido Canto & Duro Carralero, 2014).

## **5. Remarks and Conclusions**

Robotics is an emerging technology tendering mammoth capacity for different purposes. The technological challenges are not only the production of robotics, but also the extensive programming and machine learning embedded in them. There is a gap in research in terms of how the materials are engineered, the design of the products, electronics, and software for robotics market. It becomes even more noticeable due to the complexity of forecasting the growth rate and the materials demand in robotics due to the variety of sectors involved. More oriented research is also needed to showcase the role of the robotics in renewable energy sector. Advancements in robotic technology are impacting the renewable energy forefront by making changes in all its applications. As governments are pushing their green agendas, solar and energy farms, as well as geothermal and biomass energy are witnessing a drastic increase in production. Robotics will continue fostering the development of renewable energy.

Nonetheless, there are several remarks that come as a result of this study. First, there is a more need for investment in the local components in the manufacturing industry to advance manufacturing opportunities for robotics that would be profitable for robotics companies. This would yield to increased production and establishment of a new revenue stream through selling technologically advanced robotic components to robot manufacturers. Second, robotic products should be designed keeping in mind the circular economy to become more eco-friendly by using the materials and energy more efficiently. Moreover, to reduce the e-waste, they should be designed keeping in mind the effortless dismantlement of components and materials identification, their reuse or recycling. Third, robotics companies should safeguard that there is an adequate high-skilled work force to attract and maintain robotics technical expertise. Here, not only the companies, but also higher education institutions and academia should try to identify skills gaps and skills shortages for the robotics sectors so that appropriate training and skill raising programs can be created.

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# 12

## LEARNING AFTER DOUBT IN DECISION MAKING

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### *Abstract*

*In Mexico, talk of the arrival of the SARS-Cov2 virus (COVID-19) began in January 2020; the news revealed the strategy that China, from Wuhan, was developing to contain the outbreak and identify the origin of the virus. In Mexico there was the first confirmed case on February 28; Zacatecas confirmed the first case in the municipality of Ojocaliente on March 3; on March 31, the first death was confirmed in the municipality of Guadalupe. The Autonomous University of Zacatecas closed its activities on March 23. The delay in closing was motivated by doubt in the face of an experience not lived. Days later we received the invitation to participate in the design of a local strategy to monitor the spread of the virus; work was carried out in coordination with the secretary of economy of the state government and local businessmen in the design of research to apply rapid tests; the sampling considered the gender and number of employees per company; the sample was determined by the municipality of origin of the employee (n= 6007: 415 employees; 5592 open population). However, the study was not carried out due to doubts in decision-making: a) cost of the kits; b) sensitivity and specificity of the test and c) subjection of the state government with respect to the strategy of the federal government.*

*Keywords: SARS-Cov2, decision making, serological binary test*

### 1. Introduction

The pandemic caused by the SARS-Cov2 virus (COVID-19) stopped the world. An entity of infinitely tiny dimensions was capable of collapsing the social, financial, economic and health systems, among others, in the world. Even with the impressive scientific developments that have allowed us to discover images from the depths to the micro and nano universe, with the discovery of new materials, the advancement of space sciences, telecommunications and the Internet, and

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the arrogance of financial systems among others, to date, still have doubts about the origin of the phenomenon. In Mexico (Ritchie et al., 2022) to date (05/31/2022) the pandemic has caused 324.895 deaths. But beyond this serious global event, we have a great contribution from science: the anti-COVID-19 vaccines, but how did the world enter this dark period? The hypothesis of a laboratory accident persists, but so do the voices that speak of an animal-human leap, that is, the continuing doubt. In this phenomenon, paradoxically, the economically strongest countries saw people die in residences for the elderly, however, countries with economic difficulties have not been hit by the pandemic with such lethality. The mobility of people between high-income countries, the intense exchange of products and supplies seem to be facilitators of the spread of the virus.

At the end of the activities in Mexico and consequently in Zacatecas, anxiety prevailed, uncertainty in companies, public institutions, homes, productive areas and between the authorities of the municipality, the state and the country. Slowly we were assimilating an unimagined reality; we failed to understand that we were facing a long-term process that was very harmful to the human race. The news about the spread of the virus, the deceased, the efforts to have ventilators, were the news of the day; as it progressed, we realized relatives, friends who were leaving for the same cause.

As the figures accounted for deaths and infections, research institutes and centers were forced to suddenly change the orientation of their projects to try to identify the structure of the virus and biologically attack its contagious power; the big pharmaceutical companies did the same. The latter, thanks to their great economic capacity, made investments in emerging projects, personnel, infrastructure and technology; not so, the public research centers (in Mexico and the world), gave the alternative that opened the hope of reversing such a disturbing health process. Meanwhile, the indications from the World Health Organization (WHO) at a global level were: minimum distance, the use of masks and constant hand washing; this was spread by all possible means.

Zacatecas is a province of Mexico that has an approximate population of 1.622.138 inhabitants (INEGI, 2020), of which 48.8% are men and 51.2% women. There has been a migratory tradition from this entity for just over a century, to cities in the United States such as Los Angeles, California; Chicago, Illinois; Dallas and Houston, Texas, among others. The traditional migratory flow, in such a complex health circumstance, was also altered. The closure of the border blocked the opportunity for Mexican migrants to visit their families in Mexico. However, Mexican migrants, particularly those from Zacatecas in the United States, never stopped

sending their remittances, mainly for the health care of their relatives, typically in rural communities. To date and during the pandemic and post-pandemic period, the amount of remittances sent by migrants to Mexico has shown amounts with an upward trend. By 2021, migrants sent 51.585.7 million dollars (MDD). For the first semester of 2022, remittances reached 27.565.1 million dollars according to Banco de México (Banco de México, 2022).

Figure 1: Mexico: Cumulative amount of remittances by state (January-March, 2022)



Source: <https://www.infobae.com/america/mexico/2022/05/03/jalisco-michoacan-y-guanajuato-fueron-los-estados-con-mayor-recepcion-de-remesas-en-el-primer-trimestre-de-este-2022/>

Zacatecas, by 2022, ranks 12th in the amount it receives from migrants. The three states that have received more than one billion in the first quarter are Jalisco, Michoacán and Guanajuato, located in the central-western region of the country (see Figure 1) (INFOBAE, 2022).

Before the sanitary restrictions, the flow of people between one country and another was permanent; however, on 03/20/2020, the White House announced the closure of the border with Mexico to non-essential activities, in order to prevent the spread of the virus. The restrictions applied mainly to tourist activities and recreation. Until the day of closing, the United States had more than 14.200 cases of Covid-19 while in Mexico there were 164 cases and one deceased. As of 04/22/2020, the United States had 824.065 confirmed cases and 44.996 deaths; Mexico registered 9.501 confirmed cases and 857 deaths (BBC News, 2020). Knowledge of these data made evident the measure of placing health safety first. However, the risk of contagion by migrants has always been in the minds and strategies of governments such as that of Zacatecas.



With the mobility prohibitions that were proposed according to the sociopolitical and health situation of each municipality, the closures, even for the entry of people to little town and communities, as well as to border crossings between states, were legal and illegal actions (case of municipalities of Oaxaca) or based on the uses and customs that account for the limits to the freedom of the people; this epidemiological circumstance deserved answers.

## **2. Problem Statement**

In the circumstances briefly described, it was considered a problem not to have information on the behavior of the spread of the virus in the municipalities of greatest population and economic interest in the Zacatecan entity. Whether the dispersion was due to the mobility, albeit limited, of company workers, or the mobility of migrants, despite the legal restrictions. Although contagions could occur in the home itself, from the perspective of this project, it was assumed that the greatest risk could come from abroad, from labor mobility.

It ventured into those municipalities that contribute approximately 80% of the entity's GDP, this amount, it is estimated, arises from 17 municipalities in which just over one million inhabitants are also concentrated (62.5% of the total in the state of Zacatecas). The total number of municipalities in the state of Zacatecas is 58 (INEGI, 2020).

## **3. Objective**

Carry out a serological survey on workers from 53 collaborating companies and the open population in 17 municipalities in the state of Zacatecas, which contribute 80% of the state GDP, in order to detect outbreaks of COVID-19 in both sectors and propose isolation measures for possible positive cases, and prevent the spread of infection.

Until the moment of defining the objective of the work, the collaboration between the companies and the secretary of economy of the state government, was continuous and convincing; it manifested itself from the videoconferences that were held to discuss the project.

## **4. Methodology**

As the situation of uncertainty progressed, social pressure increased and the authorities of the state of Zacatecas felt the need to give explanations that they themselves probably had no way of coherently articulating. This circumstance allowed proposals of one nature and another to arise, but a

very important one began to take shape: do not leave your house. Therefore, together with the previous measures (frequent handwashing, maintaining social distance, wearing a face mask) and not going out, it really generated problems within households (domestic violence, emotional problems, etc.). This and probably other situations urged local authorities to listen to proposals to overcome the growing crisis based on possible local public policy actions, always taking care not to contravene federal policies.

To achieve the objective, the business sector in Zacatecas, university students and health professionals raised the need to carry out rapid tests to get an idea of how the virus was probably spreading.

Given that the population remained in their homes, it was thought of directing attention to the people (company workers) who kept their activities at a minimum level. The mobility of the workers was necessary to keep the productive plant active, therefore, communication was established with the representatives of the business organizations in the entity. At the invitation of the secretary of economy of the government of the state of Zacatecas, contact was made with 53 companies, which generate approximately 51.723 jobs. By limiting this universe to 17 municipalities, the number of employees participating in the integration of the target population dropped to 40.345 (14.113 women; 26.232 men) (see Table 1).

A stratified sample was designed by municipality and within it, the sample was disaggregated by proportion of workers according to the contracting company, with respect to the total open population (people over 18 years of age); in a second stage, the sample was disaggregated proportionally by gender; the errors associated with the sampling procedure were: precision (0.01) and reliability (99%).

An important step was the way to carry out the work in the field. The companies showed their willingness for the medical personnel who worked within the company to be in charge of collecting the samples. To do this, tables were prepared with the allocation by company, municipality and number of people to be sampled, both employees and the open population. The logistics for sending the results was based on the fact that the medical personnel would also be responsible for filling out the electronic sheets that were the cover of the database created to capture the information. At all times, the evidence (Kit's) with the test result should be protected by the medical staff, especially when positive tests are detected. From the beginning of the relationship with the representatives of the companies, we realized that some were already carrying out rapid tests, even manifesting

themselves in the sense of providing the information they had to improve the accuracy of the study. There was never any interest from the official side to have access to those results.

Another important point was the way to decide on the costs of supplies and the movement of personnel that would move the samples. In this regard, the indication of the Secretariat of Economy was that each company would be responsible for acquiring the Kits and carrying out the sampling procedure and concentrating the results in a database in charge of one of the authors of this report. The differences between the brands offered by the companies' suppliers, without a doubt, caused confusion, especially because there were doubts regarding the sensitivity and specificity of the kits for binary serological tests. From the responsibility for the type and quality of the inputs and the information to be generated, it was suggested to locate suppliers that guarantee the highest level of reliability of both characteristics (Krammer & Simon, 2020). In this regard, it was always kept in mind that the measurement of anti-COVI-19 antibodies would help in a more adequate management of the disease.

A turning point in the rise of interest in the project occurred with the determination of the representative of the state government in the sense that the companies would be responsible for assuming the costs of the Kit's for binary tests on Immunoglobulins G (IgG) and IgM, since, it is known that these can play an important role in the surveillance of COVID-19 and its diagnosis, as well as in the evaluation of the immune response and the verification of progress towards herd immunity (Idrovo, Moreno-Montoya, & Pinzón-Florez, 2020). Upon learning of this determination, disinterest was generalized, especially when learning that not only would workers be tested, but that the companies would also be responsible for the cost of testing the open population.

## **5. Results**

For the second fortnight of June 2020, the definitive sample was available by municipality (to take a sample of the open population) and company (to take a sample of workers). The foregoing by virtue of considering the interaction of the workers of the companies, with the open population (family, friends, acquaintances). The former, for having the obligation and need to go out to work, while the latter had to remain in confinement.

Between the months of June and August 2020, the project entered a lethargy and the communication between the government and the collaborating companies, as well as with the research group, became random. Apparently, the companies collaborated with the project until

they were told that they would be the ones to cover the costs of the survey. Another circumstance was the interest on the part of the representative of the state government that if the project continued, it would be led by one of the authors of this article and not by the person in charge of the health secretary of the state of Zacatecas. Probably the latter was the suggestion of the government of the state of Zacatecas, so that from the federal government a university researcher and not an official of the state government be identified as responsible. The verticality of the federal government's decisions, since the start of the pandemic, has remained unchanged. Therefore, a state government could not carry out an action that was not authorized by the representative of the federal government.

At the same time, when the project was made public, voices arose from local medical specialists who questioned the reliability of rapid tests and their relative usefulness, since they would only reflect the presence of antibodies against Covid-19 *post-hoc*. The clear intention derived from the study was to identify possible sources of infection and resort to the isolation of people and their environment, in order to avoid the spread of the virus and probably to propose sequential tests and the design of strategies aimed at identifying problem areas, facilitating isolation and minimize the generalization of outbreaks.

Given the evidence of the spread of contagion (see Table 1) for the three months, almost 90 days after the closure, the consistency between the size of the sample by municipality and the emergence of the number of positive cases observed can be seen. Only between the municipalities of Fresnillo, Guadalupe and Zacatecas, between the months of July, August and September of the year 2020, they concentrated 349 positive cases (67.5%) of a total of 517 positive cases in the seventeen municipalities contemplated; these figures began to generate a crisis in the hospital infrastructure, despite the fact that the most important physical hospital plant in the state of Zacatecas is located in these municipalities. They are municipalities located in the industrial corridor of the central region of the state and these are where there is the greatest mobility of personnel. Other municipalities with a high concentration of workers are Concepción del Oro and Mazapil, characterized by the strong extractive activity practiced by intensive mining. However, for the referred months, the number of positive cases was not significant. The rest of the municipalities are characterized more by their agricultural vocation, which was not affected by the increase in positive cases, by virtue of the fact that the activity in the region is carried out in the open field, and not in closed spaces, for which reason, probably the activity in the open air allowed the production of food and agricultural products not to collapse, and the climatic conditions (dry) probably helped to reduce the spread of the virus.

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Until the end of the three months referred to, the positive cases did not represent a severe problem in municipalities with an agricultural vocation.

*Table 1: Sample by municipality and positive cases for the first three months of the first wave of COVID-19*

Town	Sample of Workers in companies	Open Population Sample	Total sample by Town	Positive cases 07/01/20	Positive cases 08/01/20	Positive cases 09/01/20
Fresnillo	196	1.026	1.222	48	41	25
Guadalupe	70	1.027	1.097	18	53	42
Zacatecas	50	811	861	25	54	43
Rio Grande	9	382	391	7	6	9
Sombrerete	19	351	370	1	10	5
Jerez	7	356	363	4	13	7
Loreto	2	331	333	3	4	4
Calera de V.R.	21	240	261	7	10	8
Ojocaliente	16	238	254	4	7	9
Nochistlán	0	174	174	4	6	0
Tlaltenango	0	168	168	2	4	3
Jalpa	0	151	151	1	1	1
Mazapil	7	93	100	3	1	1
Luis Moya	5	74	79	1	2	3
C. del Oro	6	69	75	0	2	1
Morelos	5	66	71	2	4	4
E. Estrada	2	35	37	0	2	2
Total	415	5.592	6.007	130	220	167

*Source: Own elaboration with data from (SEZAC, 2020) and Ritchie, et al., 2022.*

It is from the municipality of Zacatecas (State Capital) from where female workers (30.35%) and male workers (69.65%), are contributed, to the largest number of companies (35). The municipality of Fresnillo contributes 20.650 (51.18%) of the total number of workers (40.345) who made up the universe of the project. 7.392 (35.8%) women and 13.258 (64.2%) men leave this municipality to work in 33 companies; the municipality of Guadalupe contributes 6.047 workers (2.857 women and 3.190 men) who work for 27 companies (see Table 2). 31.447 workers leave these three municipalities, 77.95% of the total universe of the project. But also 90 days after the closure of activities (see Table 1), it is these three municipalities that concentrated the highest percentage of positive cases.

As can be seen (see Table 2), the workers from Zacatecas, Fresnillo and Guadalupe are, due to their number, the ones who turn to a greater number of companies. Although the companies took sanitary measures from the first days of 2020, they also recognized that it could be in the company where the greatest risk of contagion could occur.

Undoubtedly, if the study had been carried out, workers with positive responses to IgG or IgM would have been detected in some way, which, with the existing knowledge up to that moment, would most likely have led to unavoidable actions in the face of the evidence, but that these actions

(isolation of positive cases and their environment) would surely represent an element of friction between the state and federal governments, but that despite the probable insubordination of the local governor in the face of the decisions of the president of the country, it could be an act of social recognition that it was urgent to reproduce; however, the doubt in decision-making is probably nested in the number of people who lost their lives in the first months of the pandemic.

*Table 2: Male and female workers by municipality and number of companies that hire them*

Town	Women	Men	Total	Number of companies with employees of town
Zacatecas	1.442	3.308	4.750	35
Fresnillo	7.392	13.258	20.650	33
Guadalupe	2.857	3.190	6.047	27
Calera de V.R.	782	1.230	2.012	19
Jerez	308	312	620	18
Morelos	161	361	522	16
Sombrerete	170	1.664	1.834	14
Río Grande	316	462	778	13
Ojocaliente	323	699	1.022	12
Enrique E.	92	129	221	9
Luis Moya	112	295	407	8
Loreto	33	140	173	8
C. del Oro	66	501	567	6
Mazapil	58	679	737	4
Tlaltenango	1	2	3	3
Nochistlán	0	2	2	2
Jalpa	1	4	5	1
<b>Total</b>	<b>14.113</b>	<b>26.232</b>	<b>40.345</b>	

*Source: SEZAC, 2020*

A first learning derives from the fact that in the case, apparently greater weight was given to the subordination of the decisions of the state government based on the indications of the federal government; this weighting led to not acting together with the economic implications of the tests and the lack of support from the state government to solve the proposed actions.

The learning is pertinent not only because of the above, but also because of the rise in social support for the president of the republic, his recent arrival at the highest responsibility accompanied by an unprecedented vote, in contrast, to the already close departure of the governor of the state of Zacatecas championed by an opposition party to the current government. The result was that, whether it was one aspect or another, inaction allowed the rise of the contagion to manifest itself with its halo of death of workers in municipalities with the most important industrial settlements in the state of Zacatecas.

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Based on the information in the table above, the calculation of the final sample size was carried out. The determination of the sample size took into consideration the population by municipality over 18 years of age (see Table 3).

As can be seen, the municipalities of Fresnillo, Guadalupe, Zacatecas once again appear as the three most important for the volume of workers they contribute. Despite the fact that the municipality of Calera de V.R. is where the companies that hire the largest number of workers are based, they have to travel from other municipalities such as the capital of the state of Zacatecas.

*Table 3: Sample disaggregated by companies and open population by municipality*

Town	Sample of Workers in companies	Open Population Sample	Total sample by Town
Fresnillo	196	1.026	1.222
Guadalupe	70	1.027	1.097
Zacatecas	50	811	861
Rio Grande	9	382	391
Sombrerete	19	351	370
Jerez	7	356	363
Loreto	2	331	333
Calera de V.R.	21	240	261
Ojocaliente	16	238	254
Nochistlán	0	174	174
Tlaltenango	0	168	168
Jalpa	0	151	151
Mazapil	7	93	100
Luis Moya	5	74	79
C. del Oro	6	69	75
Morelos	5	66	71
Enrique Estrada	2	35	37
Grand Total	415	5.592	6.007

*Source: self-made*

The desirability for the location of the largest number of companies in the municipality of Calera de V.R., is due to aspects such as flat land, proximity to the international airport, the immediate passage of federal highway No.45, and the existence of water in the subsoil for the activities to develop.

To date (06/2022), the official figures for the municipalities considered in the study report 37.556 confirmed cases of COVID-19 infection, 2.605 deaths, and an average lethality of 9.41% (Table 4). The highest frequency of deaths corresponds to the three municipalities referred to with respect

to the volume of workers they contribute. In some way, having carried out the study, if there were no doubts in decision-making, it would probably have made it possible to establish control measures for what today, we know, have been the municipalities with the highest mortality rates. It is not easy to establish a linear relationship between confirmed, recovered and negative cases, because as we learned, other factors such as comorbidities, physical condition of people, eating habits, etc., are involved in the evolution of the infection.

Another variable that probably affects the results observed today (see Table 4), is the concentration of resources that the health sector of the state of Zacatecas had to care for the sick. Clearly, in the state capital (Zacatecas) and in the conurbation municipality of Guadalupe, hospitals are concentrated (IMSS, ISSSTE, SSA, among the public ones), and those that offer private services (Hospital San Agustín, Hospital San José, among the main ones), so it will be important to observe the number of recovered patients in Zacatecas and Guadalupe (see Table 4). It is the same case as in the municipality of Fresnillo, which has a hospital unit (the second in importance in the state) that was receiving patients in critical conditions and even without the appropriate equipment (ventilators) and their own medicines to attend to the health circumstance. This municipality, based on official data, is the one that reported the highest fatality rate. Due to this fact, an additional learning is obtained:

The frequency of positive cases, deaths and, therefore lethality by municipality is not strictly attributable to the three municipalities in question, since the hospital infrastructure with the greatest physical and human capacity is concentrated in them; some of the cases may not strictly correspond to these municipalities, since the transfers were frequent, the howling of the ambulance sirens was common and frequent. There is probably an overestimation of the lethality in these municipalities due to the handling of the information and, therefore, some confusion about the origin of the contagion.

Therefore, the derived learning consists of the need to have a control system for patients and their conditions, as well as the urgent need to solve the serious difficulties of infrastructure and health personnel in the territory. The pandemic exposed the deficiencies in both components, as well as in an efficient communications network that, in a similar circumstance, guarantees prompt and efficient care for patients, seeking to reinforce survival strategies.



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*Table 4: Frequency of cases: confirmed, deaths, recovered, negative, suspected and lethality by municipality*

Town	Conf	Deaths	Recov	Neg	Susp	Lethality by town
Fresnillo	7.511	646	6.865	10.026	1.085	0.086
Zacatecas	10.563	636	9.927	16.463	482	0.060
Guadalupe	9.525	432	9.093	15.254	1.931	0.045
Jerez	1.436	187	1.249	1.637	68	0.130
Rio Grande	794	139	655	932	24	0.173
Sombrerete	1.731	105	1.626	1.832	38	0.060
Ojocaliente	586	74	512	744	103	0.126
Calera de V.R.	762	73	689	1.163	16	0.095
Loreto	542	68	474	573	152	0.125
Tlaltenango	958	56	902	982	32	0.058
C. del Oro	514	42	472	544	15	0.081
Nochistlán	1.319	39	1.280	673	14	0.029
Morelos	377	39	338	496	6	0.103
Mazapil	298	23	275	379	7	0.077
Jalpa	458	18	440	410	12	0.039
Luis Moya	96	17	79	157	5	0.177
Enrique E.	86	11	75	84	8	0.127
<b>Total</b>	<b>37.556</b>	<b>2.605</b>	<b>34.951</b>	<b>52.349</b>	<b>3.998</b>	<b>0.094</b>

*Source: Own elaboration based on Ritchie, et al., 2022*

Despite the difficulties in decision-making, over time, we see the official data by municipality. A correlation analysis reflects the significant association ( $p < .05$ ) between the number of confirmed cases (Conf) with Covid-19 infection, number of deaths (Deaths), number of recovered patients (Recov), number of cases negatives (Neg), number of suspected cases (Susp) and the sample size determined before the pandemic worsened in Zacatecas.

In some way, the significant correlation with the Covid-19 variables allows sowing doubt about the absence of decision-making in the face of the health circumstance. The foregoing is visible through Table 5, where the correlations and their level of significance with the frequency of positive cases of COVID-19 in Zacatecas are presented.

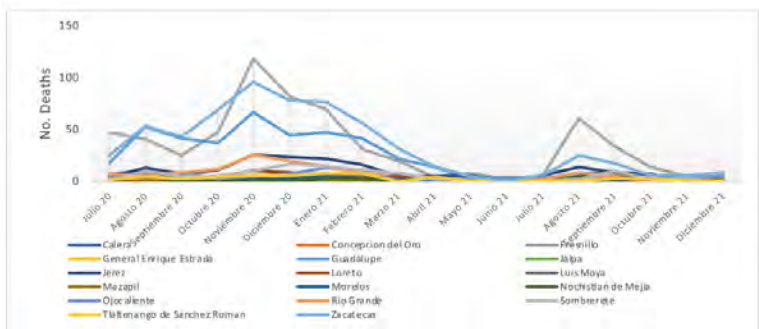
Table 5: Correlations between pandemic indicators and designed sample size

	Conf.	Deaths	Recov	Neg	Susp	Sample
Conf	1	.946**	1.000**	.995**	.826**	.914**
Deaths	.946**	1	.939**	.924**	.739**	.944**
Recov	1.000**	.939**	1	.996**	.829**	.908**
Neg	.995**	.924**	.996**	1	.829**	.891**
Susp	.826**	.739**	.829**	.829**	1	.869**
Sample	.914**	.944**	.908**	.891**	.869**	1

\*\**. The correlation is significant at the 0.01 level (2 tailed).*

When we find ourselves in the so-called fifth wave of COVID-19 infections, the data show that, indeed, there is a clear trend towards a constant decrease in deaths from this cause. It is evident that, from July 2020 to May 2021, the three multi-cited municipalities-maintained supremacy in the number of deaths, then there was a resurgence from July to November 2021. In the number of deaths, these three important municipalities have been consistently followed in this variable by the municipalities of Río Grande and Jerez. The first, important for its contribution to bean production in Zacatecas and Mexico; the second is characterized by its migratory and tourist vocation. All of them were proportionally considered in the sample designed in the conception of the project (see Graph 1).

Graph 1: Death trend (Jul-20 to Dec-21) in the municipalities of interest



Source: Own elaboration based on Ritchie, et al., 2022

To date and from the data generated by the Environmental Geography Research Center of the National Autonomous University of Mexico (UNAM, 2022), they account for the process. For illustration purposes

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only, information on population, active cases, accumulated cases, and deaths is presented for the three main municipalities mentioned above. The municipality of Calera de V.R. has been added for comparison purposes only. The information reiterates what the designed sample foresaw, a greater selection pressure in the three main municipalities. Zacatecas and Fresnillo, in this process, have shown the greatest problem due to the number of deaths, followed by Guadalupe. Calera de V.R. is only presented to point out the significant drop in cases and deaths.

*Table 6: Current data for four participating municipalities*

Town	Population	Active cases	Recovered cases	Accumulated cases	Deaths
Calera de V.R.	47.377	16	870	1.183	79
Fresnillo	242.826	368	8.854	12.150	716
Guadalupe	199.581	408	14.410	18.893	473
Zacatecas	155.533	431	16.014	21.175	727

*Source: covid19.ciga.unam.mx*

## 6. Conclusion

The effort made in planning the study, the opening of the business sector to provide information on its workforce, and the interest of the private sector so that the government in turn had evidence on the probable evolution and spread of the disease, and facilitate the taking of relevant decisions in the face of such a complex health circumstance, it was a clear signal and a great sense of solidarity, since it reveals the convergence of wills and the visible and decisive participation of the academy to propose the protocol. All sectors around a common interest composed of: identifying outbreaks, proposing measures and preventing the spread of the virus. Everything collapsed, when the public sector (local government) minimized itself and set aside the common effort to avoid conflicts with the federal government, leaving the entire anti-COVID-19 strategy in its hands, which, until before the appearance of vaccines, it was only restricted to issuing what everyone knew: social distance, hand washing and use of face masks, but, above all, not going out if it was not absolutely necessary. The ability of the sectors to propose a strategy was shown, which was not operated.

The learnings are relevant in the sense that inaction will be a reason for reflection and speculation about what could have been done if the effort had been carried out. The submission of actions exclusively to the provisions of the federal government, can have various readings. One of them is the imposition of the federation on the initiative of a free and sovereign state that, at the initiative of its governor, thought of the need to generate actions in the face of emptiness and uncertainty during the first

months of the pandemic. A similar initiative is unknown in the context of the remaining 31 free and sovereign states of the country. The additional learning has to do with the exposure of the limited capacity to respond to the needs that were saturating the hospital infrastructure. The transfers from remote municipalities to hospital units in Zacatecas, Fresnillo and Guadalupe, without a doubt, arrived with patients in precarious conditions and surely collapsed with fatal outcomes. The underlying doubt: ¿Had the project been developed, would the frequency of positive cases, deaths, etc., have been of a lesser magnitude? ¿Would the knowledge of possible outbreaks at the beginning of the pandemic have diminished the consequences now known? ¿Would having shown interest in the information already generated from the tests that the companies were carrying out allow a more accurate process to be carried out in predicting the spread of the virus? These are questions that have no answer.

There is no doubt, the health circumstance should have left lessons in the sense of designing health strategies that allow rapid detection of the emergency of situations that can put groups of workers and the open population at risk. Monitoring should become, as it always should have been, an unavoidable state policy on health. An effort to contain the spread of the virus cannot close collaboration even from the business side.

Protagonism has been a reprehensible act by Mexican society; the opacity even today about the real figures, will be a matter of permanent discussion. Meanwhile, from our spaces, collaboration will be permanent to put on the agenda, the importance of timely decision-making and the recovery of learning that has left such a severe health experience for humanity.

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# 13

## MEASURING THE EFFICIENCY OF COUNTRY ECONOMIES BY DATA ENVELOPMENT ANALYSIS (AN ESSAY ON TURKEY, MIDDLE EAST AND NORTH AFRICAN COUNTRIES)

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### **Abstract**

*In today's world, the main purpose of countries is increasing welfare through economic growth. In order to achieve this goal, all countries have to use their resources effectively and efficiently. Data Envelopment Analysis (DEA) is an appropriate analysis technique in measuring the efficiency of national economies and comparing them via many variables. In this study, the DEA (data envelopment analysis) method, which was developed to measure efficiency and has a wide application area in the literature, is used. The DEA method can rank countries by considering how effectively they use their resources, and at the same time, it can create a reference system for inefficient countries. 19 countries in the Middle East and North Africa called MENA countries, are included in the analysis. With the help of the data prepared by the World Bank, the technical efficiency of the countries is revealed by using 5 inputs and 3 outputs. Input variables used in the analysis are; total population, share of imports in GDP, unemployment rate, inflation rate and foreign direct investments, and output variables are gross national product per capita, food production index and share of exports in gross domestic product. Considering the availability of data, the analysis covers the years 2017-2019. As a result of the analysis, effective countries are determined and improvement tables are prepared for inefficient countries. In this way, suggestions are indicated for the countries about which resources they should use in order to increase their efficiency compared to the countries they compete with.*

*Keywords: Data Envelopment Analysis, Efficiency, MENA Countries*

*JEL Codes: C14, O47, R11*

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## 1. Introduction

In today's world, the main purpose of countries is shaped as welfare increase and economic growth. In order to achieve economic growth, countries have to use their resources effectively. Product diversification, efficient use of natural resources, ensuring the balance of imports and exports, increasing the level of welfare, giving importance to education can be listed as the prerequisites for both economic growth and sustainable development. The increase in the population and inflation, the decrease in the food production index and the war environment in the country will adversely affect the economic progress. Due to the rapid increase in human needs despite scarce resources, economic approaches have emerged that aim to ensure growth by importing inputs and products for the consumption of the country's population. However, although imports bring along technology transfer, it also causes an increase in the unemployment rate in the country. In order to avoid this negativity, countries should be able to maintain the balance of imports and exports and develop an import policy based on exports. Countries that realize a large part of oil and natural gas exports, which have a wide usage area in the world, are the countries of the MENA region. Countries in the MENA region are; United Arab Emirates (UAE), Bahrain, Algeria, Djibouti, Morocco, Palestine (West Bank and Gaza), Iraq, Iran, Israel, Qatar, Kuwait, Libya, Lebanon, Malta, Egypt, Syria, Saudi Arabia, Tunisia, Oman, Jordan and Yemen. The MENA region stands out as it has the majority of oil and natural gas reserves worldwide.

The main objective of the study and its contribution to the literature is guiding the necessary improvements by comparing the economic performance and activities of 19 countries including Türkiye and the Middle East and North African (MENA) countries, which are academically and militarily called MENA countries. Of the 21 MENA countries, Djibouti, Palestine and Malta are not included in the analysis due to the inability of obtaining data. In order to compare the activities, the BCC model of Data Envelopment Analysis, which has different application areas in the literature, is used. The DEA method can rank countries by considering how effectively they use their resources, and at the same time, it can create a reference system for inefficient countries.

The study consists of three parts. In the first part, the literature in which the performances of countries in different fields are evaluated by data envelopment analysis. In the second part, data envelopment analysis, which is the application subject of the research, is briefly explained. In the third part, the economic activities of MENA countries and Türkiye are determined and improvement tables are given for inefficient countries.

## 2. Literature Review

DEA, which is a non-parametric method, has a wide application area in the literature because it has the power to measure variables with different criteria within the scope of the same model. One of the application areas of the method is countries and it is used to measure the performances of countries in various fields (such as economic, health, environmental, social, etc.). Some of the articles examined in the literature are given below.

Martínez, Arzo and Arregui (2022) measured the efficiency of 28 OECD countries in tax collection between 2004 and 2017. Input variables used in the analysis are; total number of personnel working in tax offices, total technology expenditures/total corporate income, tax audit cost/collected net income, pre-tax salaries/total administrative costs. The share of tax collection in GDP, and the share of income and corporate taxes in GDP are used as output variables. As a result of the analysis, Denmark, Norway, Sweden, Belgium and Poland are determined as the most efficient countries.

Cristobal and others in their article published in 2021, measured the spending efficiency with the DEA method, by considering the 2019 data of 156 UN member countries. As a result of the analysis, it has been determined that the countries with the highest productivity are Central African Republic, Burundi, Kango Democratic Republic and Sweden.

Tsaples and Papathanasiou analyzed the articles published in the literature between 2017-2020, in which sustainable development was measured by data envelopment analysis, in 2021.

Matsumoto, Makridou and Doumpos (2020) measured the environmental performance of 27 EU countries between 2000 and 2017 with DEA. The input variables subject to the analysis are labor, capital and energy consumption. Output variables are GDP, CO<sub>2</sub> used in energy consumption, particulate pollution and waste amount. As a result of the analysis, it is determined that the productivity scores of the countries tended to decrease until 2000-2017, and improved in the following years.

In the article published by Msann and Saad in 2020, the public sector performances of 14 countries in the MENA region between 2004 and 2015 were measured. Input-oriented DEA was used for performance measurement. Input variables considered for performing the analysis; total government expenditures and productive input values. As output variables; the value of total public performance and the values of productive outputs. As a result of the analysis, the United Arab Emirates according to the CCR



model and the United Arab Emirates, Qatar and Iran according to the BCC model were found to be effective.

Ouyang and Yang (2020) measure 2014 production efficiencies of 27 OECD countries via DEA. Income, population, government expenditure, oil supply, coal supply, natural gas supply and total area are used as input variables for measurement. Consumption, GDP and human development index are considered as output variables. As a result of the analysis, it is determined that Australia has the lowest production efficiency and this is due to low land use.

In the article they published in 2020, Tokatlıoğlu and Ertong analyzed the productivity of Türkiye and OECD countries in the health sector using 2016 data. Input variables in the application of the analysis are; The share of total health expenditure in GDP, total health expenditure per capita and the number of beds per 1,000 people. Output variables are; infant mortality rate and maternal mortality rate (per 100,000 live births) were used. As a result, it has been determined that the health systems of Estonia, Iceland, Israel, Luxembourg and Poland are fully effective.

In the article published by Alaş and Çetin in 2019, the economic efficiency of the MENA countries was measured by the DEA method, by considering the 2014 data. Dependent population rate, inflation rate, unemployment rate and import of goods are used as input variables, and GDP per capita, export of goods and employment rate are used as output variables. It has been determined that the UAE, Bahrain, Israel, Qatar, Malta, Saudi Arabia and Oman have economic efficiency.

Aydın Yeniöğlü and Ateş (2019) measure the efficiency of 7 European countries and Türkiye, which have shown progress in the use of renewable energy sources, by using the data of the years 2015-2016 via DEA. Annual renewable energy investments, primary energy consumption and renewable energy consumption are used as input variables in the analysis; Gross domestic product is used as output variable. As a result of the analysis, it is determined that Turkey is not efficient.

In the article published by Emek in 2019, the economic activities of Türkiye and EU member countries are analyzed by considering the data of 2015. In order to carry out the analysis, total imports, population and external debts are used as input variables; GDP is used as the output variable. As a result of the analysis, it has been determined that Türkiye, Poland, Czech Republic, Slovakia, Slovenia, Estonia, Montenegro, Kosovo and Iceland have economic efficiency.

Raufu et al., in their article published in 2018, measured the agricultural productivity of MENA and South African (SA) countries separately between 1991 and 2010. In the analysis, FAO production index was considered as output variable, while labor force, land size, pesticide use, total number of animals (sheep equivalent) and fertilizer use were taken as input variables. As a result of the analysis, it was determined that Jordan in 1996, Egypt in 2002 and Tunisia in 2003 were the most active countries.

In the article they published, Tunçsiper, Sayın and Özcan (2017) measure the macroeconomic performances of 34 OECD member countries between 2009 and 2016 with DEA. In the realization of the analysis, employment rate, general price level, and current account balance rate are used as input variables; The growth rate is also taken as the output variable. As a result of the analysis, it has been determined that Luxembourg is the only country that has been effective for all years.

In the article published by Biri and Jemmali, 2015, the public expenditure (management, health, education and infrastructure) efficiency of MENA countries between 1996 and 2011 was measured by DEA. As a result of the analysis, it has been determined that Jordan is efficient in administration, health and education expenditures, and Tunisia in infrastructure expenditures.

Rashidi, Shabani and Saen, in their article published in 2015, calculated the environmental efficiency of OECD countries for 2007 with DEA. For the measurement of environmental efficiency, they determined labor force, average precipitation, coal consumption and oil consumption as input variables. They considered the variables of CO2 emissions and GDP as outputs. As a result of the analysis, It has been determined that the countries of France, Germany, Luxembourg, Norway, Sweden and the United Kingdom have environmental efficiency.

Ramanathan, in his article published in 2006, measured the economic development of MENA countries in 1999 with DEA. Variables used in the analysis; labor force, life expectancy, number of female teachers in primary education, gross national product per capita, population of working age, ratio of illiterate women to total female population and infant mortality rate. As a result of the analysis, Bahrain, Jordan, Kuwait and United Arab Emirates were found to be effective among the 18 MENA countries considered.

### 3. Data Envelopment Analysis

DEA was developed by Farrel in 1957 and later revised by Charnes-Cooper and Rhodes (CCR) in 1978 (Othman et al., 2016, p. 912). DEA is a non-parametric linear programming (LP) method used to evaluate the relative effectiveness of a set of alternatives known as decision-making units (DMUs) with the same input and output variables. Efficiency can be broadly defined as getting the most output with a given amount of input or using the least input for a given output level. (Rashidi, Shabani, & Saen, 2015, p. 242). This technique for measuring efficiency was introduced by Farrel, based on the basic theory of production on a single input and a single output. However, since multiple inputs are commonly used to produce a single or more output, this measurement is not entirely representative of efficiency, leading to a modification of the original equation to include the measurement of multiple inputs and multiple outputs (Othman et al., 2016, p. 912). The most important advantage of DEA technique compared to parametric methods is that it can accommodate multiple inputs and outputs, and at the same time, it does not limit the statistical measurement units of input-output variables (Özbuğday, Turgil, & Köse, 2020, pp. 3-4). In the context of DEA, efficiency is defined as the ratio of a DMU's total outputs to its total inputs. It defines the input/output weights for each DMU in order to maximize efficiency by bringing together multiple inputs and outputs and comparing DMUs among themselves.

Derived efficiency scores for all units are between 0 and 1, and higher scores indicate more efficient DMUs, and a result of 1 indicates that DMU is active (Matsumoto, Makridou, & Doumpos, 2020, p. 3). DEA is divided into two basic models, CCR and BCC. CCR model; Since it is a model developed by Charnes, Cooper and Rhoders, it is expressed with their initials and adopts the assumption of constant returns to scale. According to this model, the active units are located on a straight line. In 1984, the BCC model was developed by Banker, Charnes and Cooper on the assumption of variable returns to scale. The BCC model has a non-negative element constraint and argues that the effective units are on a convex line. CCR and BCC models can be solved in two ways as input and output-oriented methods. The output-oriented method aims to maximize outputs with a given amount of inputs. The input-oriented method, on the other hand, aims to minimize the inputs with a certain amount of output, which assumes that there is more control over the input variables (Othman et al., 2016, p. 912).

This study adopts the minimum input target under variable returns to scale, because our primary goal is to maximize GDP per capita by minimizing factors such as unemployment and inflation. The BCC model,

which uses the assumption of variable returns to scale, thinks that each DMU has an optimum operating level by using its own inputs and outputs, and thus says that it will measure technical efficiency.

Objective function;

$$\emptyset = \min \emptyset$$

Subject to; (1)

$$\sum_{j=1}^n k_j x_{ij} \leq E x_{i0} \quad i = 1, 2, \dots, m$$

$$\sum_{j=1}^n k_j y_{rj} \geq y_{r0} \quad r = 1, 2, \dots, p$$

$$\sum_{j=1}^n k_j = 1$$

$$k_j \geq 0 \quad j = 1, 2, \dots, n$$

When the above equations are examined,  $DMU_0$  is one of the DMUs subject to the analysis.  $x_{i0}$  and  $y_{r0}$  represent  $i$  inputs and  $r$  outputs for  $KVB_0$ .  $\emptyset$  represents the activity score. The fact that  $\emptyset=1$  indicates that the analyzed  $DMU_0$  is active, that is, it cannot minimize the input variables any more. If  $\emptyset < 1$ , it shows that the analyzed DMU is ineffective, and it can further minimize the amount of input in order to produce the same output amount.

#### 4. Application and Analysis Results

DEA, which has a wide area of use in practice, is a non-parametric method and gives the chance to measure data with different measurement tools in a common denominator. On the other hand, the decision-making units that are put into practice must have the same data set. The aim in DEA is measuring the effectiveness and efficiency of the decision-making units that are the subject of the analysis, and making remedial suggestions for the ineffective decision-making units. The DEA model using linear programming is solved one by one for each decision-making unit subject to the application. As a result of the solution, it is determined that the

objective function value of the model be equal to “1”, which shows that the decision-making unit is effective and efficient.

When using data envelopment analysis, it is assumed that the decision-making units (DMU) included in the analysis are similar (homogeneous). That is, they are considered to be similarly sized units that can produce the same set of inputs and outputs. However, it is difficult to achieve complete homogeneity when combining DMUs. There are also various articles dealing with the issue of ensuring homogeneity within the scope of DEA (Dyson at al., 2001, p. 247).

Data envelopment analysis can be solved with two basic models, CCR and BCC. In addition, each model should be considered as input or output oriented. In the selection of DEA model, the structure of the problem and the results expected from the efficiency analysis are important. For example, if the output change is expected at the same rate as the change in inputs, the CCR model is applied, and if the change in the inputs is not expected at the same rate in the outputs, the BCC model is applied. The control of DMUs over inputs and outputs should also be taken into account. In the input-oriented model, the basic logic is that the decision-making units can change their inputs. In the output-oriented model, it is assumed that there is a control or influence on the outputs.

In this study, the input-oriented BCC model was used with the idea that the control of the countries is in question. The countries subject to the analysis are the Middle East and North Africa (MENA) countries, which are called the MENA region, and 19 countries, including Turkey, and the data from 2017 to 2019 were taken into account.

While selecting the input and output variables of DMUs, it is important that the data can be obtained, the accuracy of the data obtained, and its availability for each DMU. There are different explanations in the literature regarding the number of DVs. Although the general opinion is that the number of DMUs is as high as possible, it is stated in the literature that the number of DMUs should be at least 3 times the number of input and output variables in the model, while some sources state that it can be at least one more than the sum of input-output.

Here, 19 DMUs were used due to the scope of the research problem. In addition, expert opinion and/or correlation analysis can be used when determining inputs and outputs. Care should be taken to keep the criteria that are important as a result of the correlation analysis in the model (Aytekin et al., 2022, p. 4).

Input and output variables, which are the subject of the analysis, are given in Table 1 to measure the economic efficiency of the MENA region countries by using the data of the World Bank. Input and output variables were determined by similar studies in the literature, theoretical expectations and correlation analysis.

*Table 1: Input-Output Variables Included in the Analysis*

Inputs	Outputs
Total Population	GDP Per Capita
Share of Imports in GDP	Food Production Index
Unemployment Rate	Share of Exports in GDP
Inflation Rate	
Foreign Direct Investments	

*Source: Authors' Elaboration.*

Correlation analysis was performed to reveal the relationship between the input-output variables used in the analysis. The result of the correlation analysis is given in Table 2.

*Table 2: Correlation Analysis between Variables*

	Output Variables			Input Variables				
	GDP Per Capita	Food Production Index	Share of Exports in GDP	Total Population	Share of Imports in GDP	Unemployment Rate	Inflation Rate	Foreign Direct Investments
GDP Per Capita	1	0,309	0,435	-0,385	0,393	-0,746	-0,402	0,267
Food Production Index	0,309	1	0,435	-0,261	0,264	-0,597	-0,348	0,497
Share Of Exports In GDP	0,609	0,435	1	-0,357	0,89	-0,514	-0,437	0,232
Total Population	-0,385	-0,262	-0,357	1	-0,304	0,251	0,638	-0,36
Share Of Imports In GDP	0,393	0,264	0,89	-0,357	1	-0,36	-0,276	0,111
Unemployment Rate	-0,746	-0,597	-0,514	0,251	-0,36	1	0,245	-0,169
Inflation Rate	-0,402	-0,348	-0,437	0,638	-0,276	0,245	1	-0,275
Foreign Direct Investments	0,267	0,497	0,232	-0,36	0,111	-0,169	-0,275	1

*Source: Authors' Elaboration.*

As a result of the correlation analysis; There was a positive and high relationship between GNP per capita and the share of exports in GDP, and a high negative correlation was found between GNP per capita and unemployment rate. There is a high negative relationship between the unemployment rate and the food production index, a high positive relationship between the share of imports in GDP and the share of exports in GDP, a high positive relationship between the total population and the inflation rate, a negative relationship between the unemployment rate and the share of exports in GDP It has been determined that there is a positive

medium level relationship between foreign direct investments and food production index. In Data Envelopment Analysis, while investigating the suitability of input and output variables, the correlation between these variables is also looked at. In general, a high correlation is expected between the input and output variables, in line with the theoretical expectation, and a weak correlation between these variables. In general, moderate correlation was obtained between the input variables and output variables, in accordance with the theoretical expectation, and a relatively weak correlation within the variables themselves. This is another indicator besides the literature that the input and output variables are compatible.

With the help of the DEAP-xp1 package program, the results of the input-oriented BCC model for the years 2017-2019 are given in Table 2, using the input and output variables mentioned above. Table 2 shows that Bahrain, Israel, Oman, Qatar, Saudi Arabia and the UAE have had economic efficiency for three years. The countries that did not have economic activity in three years are Algeria, Jordan, Lebanon and Syria. It has been determined that a total of 11 countries in 2017, 9 countries in 2018 and a total of 10 countries in 2019 are effective.

*Table 3: Economic Efficiency Results of MENA Countries and Turkey Between 2017-2019*

MENA Countries	Efficiency Results		
	2019	2018	2017
Algeria	0.792	0.887	0.825
Bahrain	1	1	1
Egypt	1	0.968	0.947
Iran	0.636	0.837	1
Iraq	0.955	1	1
Israel	1	1	1
Jordan	0.625	0.792	0.727
Kuwait	1	0.892	0.850
Lebanon	0.813	0.844	0.870
Libya	0.856	1	1
Morocco	0.623	1	1
Oman	1	1	1
Qatar	1	1	1
Saudi Arabia	1	1	1
Syria	0.765	0.807	0.743
Tunisia	1	0.624	0.688
UAE	1	1	1
Yemen	1	0.645	0.927
Türkiye	0.981	0.968	1

*Source: Authors' Elaboration.*

Table 4, below, shows what Algeria needs to do in order to reach efficiency, which has not been effective and productive for 3 years as a result of the

input-oriented BCC model. Algeria, which had 0.825 (82.5%) events in 2017, needs to be done in order to reach the event score.

Table 4: Economic Efficiency Results of Algeria in 2017

Algeria 0,825		Factors	Current	Target	Potential Improvement (%)	Reference Set 4 Iranan (%26) 6 Israel (%46.4) 14 Saudi Arabia (%27.6)
Year 2017	Inputs	Total Population	41389174	34137923	-17.52	
		Share Imports GDP	33	27.24	-17.46	
		Unemployment Rate	10.33	6.76	-34.56	
		Inflation Rate	6.4	5.28	-17.5	
		FDI	8029790134	6586461539	-17.98	
Outputs	GDP Per Capita	4119	24404	492.47		
	Food Production Index	103	103	0		
	Share Exports GDP	26	33.54	29.00		

Source: Authors' Elaboration.

When the above 2017 improvement table is examined, it is indicated that Algeria needs to reduce its population by 17.52 percent, the share of imports in GDP by 17.46%, the unemployment rate by 34.56%, the inflation rate by 17.5% and direct investments by 17.98%. On the other hand, it has been determined that the per capita gross national product should increase by 492.47% and the share of exports in GDP by 29%. While making these improvements, it is clear that Iran should take as reference 26%, Israel 46.4% and Saudi Arabia 27.6%. When the results of the 2018 analysis, which had an efficiency level of 0.887 (88.7%), were examined.

Table 5: Economic Efficiency Results of Algeria in 2018

Algeria 0,887		Factors	Current	Target	Potential Improvement (%)	Reference Set 6 Israel (%55.4) 12 Oman (%2.2) 14 Saudi Arabia (%42.4)
Year 2018	Inputs	Total Population	42228415	19621314.57	-53.54	
		Share Imports GDP	32	28.37	-11.34	
		Unemployment Rate	10.42	4.82	-53.74	
		Inflation Rate	6.86	5.63	-17.93	
		FDI	14807995470	14807995470	0	
Outputs	GDP Per Capita	4042	30188	646.86		
	Food Production Index	108	108	0		
	Share Exports GDP	26	34.7	33.46		

Source: Authors' Elaboration.

It is necessary to reduce the total population by 53.54%, the share of imports in GDP by 11.34%, the unemployment rate by 53.74% and the inflation rate by 17.93%; on the other hand, it has been determined that the per capita gross national product should increase by 646.86% and the



share of exports in GDP by 33.46%. In this process, it is seen that it should take Oman with a rate of 2.2%, Israel with a rate of 55.4% and Saudi Arabia with a rate of 42.4%. When the results of the 2019 analysis are examined, in order for Algeria, which has an efficiency of 0.792 (79.2%), to reach the full economic efficiency.

*Table 6: Economic Efficiency Results of Algeria in 2019*

Algeria 0,792		Factors	Current	Target	Potential Improvement (%)	Reference Set 6 Israel (%9.2) 12 Oman (%55.3) 18 Yemen (%35.4)
Year 2019	Inputs	Total Population	43053054	13925516	-67.66	
		Share Imports GDP	29	22.96	-20.83	
		Unemployment Rate	11	6.08	-44.73	
		Inflation Rate	4	3.17	-20.75	
		FDI	7323348396	5798173345.8	-20.83	
Outputs	GDP Per Capita	4006	12166.95	203.72		
	Food Production Index	112	116.82	4.3		
	Share Exports GDP	23	29.88	29.91		

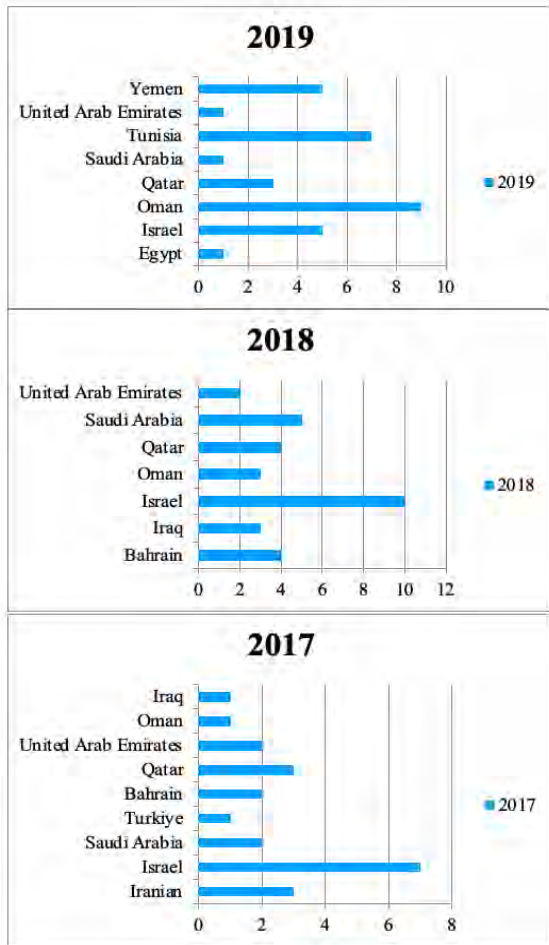
*Source: Authors' Elaboration.*

It has been determined that it should take Oman with a rate of 55.3%, Israel with a rate of 9.2% and Yemen at a rate of 35.4%. It should reduce the total population determined as input variables by 67.66%, the share of imports in GDP by 20.83%, the unemployment rate by 44.73%, the inflation rate by 20.75% and the share of foreign direct investments by 20.83%. It is seen that it should increase the gross national product per capita determined as output variables by 203.72%, the food production index by 4.3% and the share of exports in GDP by 29.91%.

Undoubtedly, it would not be correct to consider the decrease in inputs as an absolute decrease. For example, a decrease may be valid for some inputs such as unemployment, inflation, and imports, and it would be more accurate to ensure that investments are directed to sectors that produce products with high added value in foreign direct investments. Similarly, reducing the population of the country should be evaluated in this context. It is necessary to increase labor productivity with productivity increases, and to increase these input activities by applying demographic and social policies that regulate the population growth rate.

As it can be understood from the improvement tables, in order for the ineffective decision-making units to be effective, they should take the effective decision-making units as a reference. According to the results of the analysis obtained, the frequency of reference of the decision-making units that are effective over the years is given in figure 1.

Figure 1: Number of References to Effective DMUs by Years



Source: Authors' Elaboration.

When Figure 1 is examined; Yemen was only active in 2019 and was cited 5 times as a reference to inactive decision-making units. The United Arab Emirates has been active for three years and has been referenced 5 times in total. Just like Tunisia and Yemen, it was fully active only in 2019 and was referenced 7 times. Saudi Arabia, Qatar, Oman and Israel were active for three years; In total, Saudi Arabia was cited 8 times, Qatar 10 times, Oman 13 times and Israel 22 times. Egypt was active in 2019 and was taken as a reference once. Iraq and Bahrain were active in 2017-2018 and Iraq was referenced 4 times and Bahrain 6 times. Iran and Turkiye were active only in 2017. While Turkey was referenced once, Iran was referenced 3 times.

## 5. Conclusion

In this study, in which the economic activities of the Middle East and North African countries and Türkiye in the period of 2017-2019 are measured, it is been determined that 6 countries (Bahrain, Israel, Oman, Qatar, Saudi Arabia and United Arab Emirates) have full efficiency for three years. In 2019, while 10 countries (Bahrain, Egypt, Israel, Kuwait, Oman, Qatar, Saudi Arabia, Tunisia, United Arab Emirates and Yemen) were active, 9 countries were inactive. In 2018, the number of active countries was 9, and in 2017, the number of active countries was 11. When the effective countries are examined as references to the ineffective countries, it is seen that the most referenced country was Israel (22 times), followed by Oman (13 times). When the efficiency results are examined on the basis of years and countries, first of all, in order for the ineffective countries to be effective, it can be indicated that they should significantly increase the amount of "Gross National Product per capita" determined as an output variable and decrease the "unemployment rates" as an input variable.

Here, the applicability of the suggestions for reducing the inputs obtained from the model result reference sets in the real economy is a separate discussion topic. Of course, the main recommendation here is that besides reducing the relevant inputs, they should be used effectively and efficiently for appropriate inputs. Efficiency increases in input use will further increase output. Policies for these results need to be developed. For example, in the applicability of the "reduce the population" proposal so that a country can achieve the output in the relevant period, it would be more accurate to apply demographic policies to regulate the population growth rate in the long run. Considering the numerical results obtained in this study, various macro-economic social policies that can be implemented can also be investigated.

It is thought that obtaining and including the data of 2020 and 2021 in the analysis and performing the analysis again by taking the averages of the input-output variables may give clearer results for the countries. At the same time, it should be taken into account that the comparison of the results obtained by considering different input and output variables may make a significant contribution to the literature.

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# UNEMPLOYMENT AND INEQUALITY IN THE TIME OF COVID-19

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The COVID-19 pandemic has affected many people's current and future well-being and raised renewed concerns about multiple kinds of inequality both within and between countries. Among those most affected are workers in the informal economy, young people, and women. Assessing the impacts of COVID-19 on societies, economies, and vulnerable groups is essential to inform and adjust government responses to recover from such emergencies and ensure that no one is left behind. This edited book aims to identify the inequality and unemployment consequences of the pandemic and investigate what can be done for a better World.

Editors  
Sinan Alçin  
Humberto Merritt  
Emilia Alaverdov  
M. Mustafa Erdoğan

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