

## TRENDS ON THE LABOR MARKET EQUILIBRIUM

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**Abstract:** Since the beginning, human civilization was structured around the concept of work. Currently, however, human labor is systematically removed from the economic processes. By the end of the 21st century it is very likely that human work should be gradually replaced by automated work in most industrialized countries. New generation of IT&C will be introduced in various fields of work. These technologies together with new forms of organization and business management will cause high unemployment. In this paper we intended to investigate the new trends in employment and pattern of work in connection to the effects of information revolution.

**JEL classification:** E24, O33

**Key words:** patterns of employment, labor market equilibrium, information revolution, digital age

### 1. Introduction

Work factor held, since the emergence of economics as science, a significant place in specialists' research. Its importance has increased with the economic - and especially political and social - trends. Demographic explosion in the 20th century increased life duration, improved living standards among the population of developed countries; the emergence of the phenomenon of aging, globalization, technological progress and information revolution are factors that have increased pressures in the labor market, leading to an attention from researchers' part in the 20th century and the beginning of the 21st century. The complexity of problems on the labor market equilibrium can not be judged, unilaterally, by the classical theories of marginalism, keynesism or monetarism, but an analysis is necessary in the context of current developments, in view of enhancing the processes of globalization, the transition to information society and the international migration of labor.

Leaders of major corporations, politicians and economists estimate that the increasing of the unemployment figures is only an "adjustment" on the short term that will be solved as the global economy will enter into the information era. But millions of workers still remain skeptical. Only in the United States, corporations eliminate more than two million jobs annually. Although new jobs have been created, most of them are low paid, and many jobs are temporary or part-time. (Bridges William, 1995, p. 45).

## **2. Changing patterns of employment**

The global economy is in a continuous transformation regarding the nature of the work because the new information technologies' revolution. These technological and economic changes will force each country to rethink forecasts on long term.

Historical experience proves that, however, a few things are sustainable in terms of employment. Jobs, areas of work, qualifications required, the profession itself do not remain unchanged over time. In the past there were people who began and finished work life, whereas the first and last days of work have shown remarkably similar: the same job, same employer, same company, same tasks and fulfilled the same operation. Today, successive waves of technological changes may bring about notable changes from day to day.

„Men and women of today and tomorrow, who were taught to rely on certainty, will have to observe further developments in the world that surrounds them and live in a world of complexity and uncertainty. They need to develop their own capacity to innovate, adapt to change and management instability. They need new power for their spiritual and intellectual equilibrium to overcome the so-called stress situations." (Preda Diana, 2002, p. 80.)

At the heart of these historical changes, there are sophisticated computers, robotics, telecommunications and other technologies of the information age that have rapidly replaced human beings, especially in industry. The number of workers in factories of the United States decreased from 33% to 17% from the total employment in the past 30 years, although companies in the United States have increased production, taking the first place in terms of industrial production. Industrial workers, secretaries, receptionist, door to door salesmen, telephone operators, libraries, and managers are an average only of a few occupations for gradual extinction. We consider that by 2025 less than 5% of the total workforce will be involved in industrial production, and by mid-century we will witness the disappearance of productive workers.

Jeremy Rifkin believes that the change from unskilled labor by an elite labor is what was done to make the distinction between industrial and information age. (Rifkin Jeremy, 1995, p. 183)

One of the most visible mutations introduced by the information revolution is the Internet. Its implications on employment, economy and society in general are difficult to forecast, but they are far from being insignificant, if we consider that only 16 years ago, this meant a communication that nobody heard of and, now, its proportions became impressive. It appears the possibility for a company to hire labor from any place of the world, for the time needed without any additional investment for this. Often, there is no need to establish subsidiaries in countries where labor recruits no longer makes sense, employment being requested online and the services rendered and remunerated in the same way.

For example, it is estimated that around 15,000 women are working in the Caribbean in the field of data processing for foreign employers, just as U.S. firms consider their work as being cheaper and of the same quality as that of the Americans. India has also the local telecenters where local intelligence is engaged in processing the data by employers overseas. The need for human intelligence in Western countries, causing them to accept yet highly skilled immigrants, it can transform dramatically, as there is no longer the need of their physical presence. Wage costs paid will reduce, whereas the employees will receive a payment comparable to the average salary from their country of origin, not with that of Western countries. (Preda Diana, 2002, p. 179.)

A world better integrated and more correlated benefits by multiple advantages but, at the same time, it can be more unstable, with destructive effects in chain - once started – they can't stop anywhere with effects worldwide. Capital markets, yet the most integrated of all the global markets, which serve to the information revolution, have already proved, in recent years, their ability to contribute to decommissioning massive workforce. Despite positive signals from the labor market, it is clear that there will be jobs lost through three main channels: moral usage, automation and removal of traditional links.

Although, apparently global, work in the new economy presents information, in a paradoxical way, and a high capacity to dispose of people; they are deprived of direct contact and interpersonal relationships, leading to welding groups, creating so-called social capital, trust fund that any company needs to capitalize on the true dimension of the creative potential of its employees.

In the 80's, it was fashionable blaming the unfair competition on low-paid labor markets (especially Asian). In some branches, particularly in the production of clothing and electronics, these critics were often. Recently, however, economists began to revise their views.

Until recently, economists and politicians have assumed that industrial workers seeked to find new jobs in the services' sector. Currently, however, even the services sector is subject to automation: in banking, insurance, trading, companies replace traditional pyramid of employment with small and very well trained professional team work, using advanced software and communication technologies. Even those companies that have kept labor began a process of outsourcing of employees, making use of temporary work and part-time, to reduce labor costs and increase marginal profits. Peter Drucker noted at the end of last century that "the disappearance of labor as production factor" is only a matter of time (Drucker, 1992). 90 years ago, authors such as Alvin Toffler and John Naisbitt, have held a series of lectures in which they stated that the end of the industrial era is also the end of "mass production" and "mass work (Toffler, 1980; Naisbitt, 1990). What they have never said is what the masses should do when they become redundant.

Given the factories without workers that will dominate the nearest future, and virtual companies-which already have appeared on the horizon, each nation will have to find the answer to the problem of millions of people whose work is not needed in an economy of increasingly automatism. While politicians and economists have embraced the moment of the information, praising cyberspace virtues and virtual reality, they refused to answer to the question of how to distribute earnings of a high-tech global economy.

Until now, these gains in productivity have been used primarily to increase the profits of firms, excluding the benefit of shareholders, top managers and elite employees of high-tech field. If this trend continues, the distance between those who have and those who have not will increase, which will lead probably to social disputes, more crimes and violence.

The antidote to this absurd policy should constitute a series of discussions on how the fight for a high productivity leads to a reduction in the need for labor. These discussions must be accompanied by a new social vision more daring to look openly at the challenges we must face. In short, we should seriously think about how radically different will show the society under conditions of the global automated economy.

„The digital age can fulfill many dreams for those within the virtual reality game, but others seem to remove them the chance to integrate among the development.” (Preda Diana, 2002, p. 202.) In the past, when new technologies have dramatically improved productivity, workers have thought to receive a larger share of these increases and obtained a shorter week of work, better wages and profit shares. Currently instead of reducing the working week, employers reduce employment.

New era of information technology that saves labor should be used to give us more free time and not an increase the unemployment. Of course, employers argue that the reduction of weekly working time and sharing gains to increase productivity would be too expensive and would jeopardize their ability to compete in both the internal and the external environment. Companies like Hewlett-Packard in France and BMW in Germany have reduced the working week from 37 to 31 hours, while continuing to pay workers for 37 hours. Instead, workers have agreed to work in shifts. Companies have argued that, while being able to conduct activities 24 hours a day that will double or even triple the productivity and would be able to pay workers more time to work less.

In France, government officials are thinking about returning to provide employers with social contributions if the management will voluntarily reduce the working week. Although they will lose some revenue there are a number of benefits that appear on other routes. With a reduced working week, more people will work and will have the income to buy more goods and pay taxes.

Governments should extend the system of returning the contributions or taxes to any company that performs three actions:

- reduce voluntarily the working week;
- implement a plan for employee participation to profit, so that they can benefit directly from increased productivity;
- develop a balance between the compensation received by top managers, dividends received by shareholders and benefits of distributed employees.

By granting these incentives, employers will be more open to such changes. Unfortunately there is no unified approach on political and sociological problem of equilibrium of the labor market in the first century of the third millennium in terms of exponential evolution of information revolution.

### **3. Trend of the information revolution**

If the transition from feudal society to the industrial one was done in about 100-150 years, the transition to the information society will take several decades, which will leave little time to find solutions on the employment that will be made available. A specialist in computer science, Gordon Moore, co-founder of Intel group, has launched an idea now known as the Moore's law. According to Moore the CPU (central units of personal computers) is doubled in a period of 18 to 24 months. (www.intel.com)

If we follow the evolution of Intel microprocessor made from a single chip in 1971 we will see that Moore's law has scientific relevance:

- In 1971, Intel made a 4004 microprocessor. It was a 4-bit chip that runs at 108 kilohertz and has 2300 transistors. With today's standards it was very simple, but it was sufficiently strong to make possible the first electronic computer.
- In 1981, IBM achieved the first IBM personal computer. The first PC was based on an Intel 8088 microprocessor that runs at 4.7 megahertz (43 times higher than the rate of 4004), having 30,000 transistors.

- In 1993, he achieved the first Pentium processor, which runs at 60 megahertz (13 times higher than the rate of 8088's), with several million transistors.
- In 2000, it appeared the Pentium 4 processor, which runs at 1.5 gigahertz (13 times greater than the speed of the Pentium I) with 42 million transistors.
- Currently, Intel dual-core increased the speed to 4 gigahertz, and it is expected a spectacular leap of a new type of processor.

The same spectacular trend was made in RAM progress (Random Access Memory) and storage on the hard disk. From a 10-megabyte hard (pricing \$ 1000 in 1981) it was reached today a hard of 500 gigabytes (30,000 times greater, pricing \$ 150). RAM has been increased from 64 kilobits to 4 gigabytes (64000 times).

If we make an extrapolation based on current data we obtain for the time horizons 2020 and 2040, the following results:

**Table no. 1. Forecast of the evolution of computer capacity for the period**

**2005-2040**

	<b>1981</b>	<b>2005</b>	<b>2020</b>	<b>2040</b>
<b>Processor</b>	330000 operations/s	3 bln. operations/s	10 <sup>13</sup> operations/s	10 <sup>16</sup> operations/s
<b>Hard disk</b>	10 megabytes	300 gigabytes	1 petabytes	1 exabytes
<b>Memory (RAM)</b>	64 kilobytes	1 gigabytes	1 terabytes	1 petabytes

With such features, a personal computer (obtained with a cost of \$ 1000 equivalent to current costs) will have, by the year 2050, capacities that will exceed the human brain. Although it is hard to imagine, this scenario is very likely. These electronic brains that will put into service automated machines, humanoid robots whose construction started in present time, will result in massive substitution of labor with human artificial entities created by man.

Yet, we insist on the idea that any technically progress which although lead to destruction of many jobs, it is also the source of creating new jobs. This idea will be valid until the machines have their own intelligence and will make themselves other machines, without the help of humans.

#### **4. Scenarios for future work**

There can be imagined the following based scenarios that characterize the future of the labor market in the 21st century: (Grigore Liliana, 2000, p. 27)

*The scenario based on unemployment.* This scenario argues that unemployment is an inevitable price to be paid in order to reduce inflation, increase efficiency in industry and commerce, meet the international competition and maintain control over public expenditure, within the limits of a fiscal system that acts to reduce taxes. Unemployment is considered to be a necessary evil lower than what a state of poverty installed worldwide would have caused. While the scenario excludes a large part of the working population, the results are predictable (strikes, revolts, serious social disorder).

*Leisure time scenario.* This scenario attempts to draw attention to an advantage created by automation and the information revolution. It suggests that a small proportion of the workforce will be employed and this workforce will run with the help of equipment, machines and advanced technologies, all of the work required. Most people will do that and they will enjoy their spare time offered this way. Most people will be assisted by a special type of national income scheme, which would replace the complex types of aid received from the present social insurance system, by paying a certain amount to each person, regardless of age, social status and its capabilities. These amounts would be collected gradually from those receiving income from employment force. This theory has received several names such as: social wage scheme, the negative tax on income, a social dividend, salary citizen, etc.

*The scenario based on employment.* It is built on the premise of supporting the creation of more jobs by the state. Although there are arguments in favor of state involvements in the process of creating jobs, the funds needed to carry out a program of public works, used for this purpose, should be very high even in developed countries.

*Scenario based on the work factor.* This scenario considers that there is enough work for each person who wishes and is able to work, because in many cases work is seen as a gift, with no price given. This scenario is based on existing jobs in the unconventional economy (black, gray and autoproducers) which through legislative measures may be transferred into the conventional economy.

*End of work scenario.* Many specialists from various fields (economists, sociologists, philosophers) have addressed the impact of technology on employment, which resulted in a true landmark on the concept of full employment of labor, through the emergence of the concept "end of work". The authors that have delivered "lack of jobs" theory, consider this is a fundamental feature of the postindustrial society, claiming the idea of a social system in the future, that will expand the activities which are not related to the market (at a private or public level, individual or social level). The increase of the welfare will allow payment of two types of human activities, the work itself will be paid by the enterprises and activities not related to market will be rewarded by a "second check" received from the state.

Since failing to timely issues in the industrial society has led to installation of totalitarian governments (considered by poor people as "providential"), what effects will have ignoring social inequalities generated by a society characterized by the increasing of information, automation and globalization?

## **5. Conclusions**

Currently, most people offer their labor in exchange of a compensation in money. Our entire society is built around a simple equation: work = money. This equation explains why new technologies saving human labor threaten a group of people with significant loss of jobs and social welfare. The emergence of robots (artificial humanoid entities or not, with their own intelligence) will lead this threat at a level we have never met before. It is estimated that in the 21st century, over half of the labor force will not have access to employment (compared to the 1929-1933 crisis, when one quarter of the workforce was unemployed).

The members of the political leadership will have to take seriously into consideration the unprecedented threat on equilibrium of the labor market. More and more inactive people will be supported by funds raised by state taxation of companies.

To achieve some equilibrium and to maintain social peace it may be adopted as solutions:

- reducing working week to four or even three days;
- reducing the retirement age to 45-50 years;
- giving perpetual social aid (situated below the minimum wage, but at an acceptable level) for those who do not have access to employment;
- make a higher tax to ensure a better redistribution of profits (taking into account that productivity will explode through the use of robots)
- legislative measures for reduction in birth rates;
- creating or expanding jobs in the social sectors (culture, arts education, media).

A more drastic change would be the legal regime of the ownership of production means, to facilitate access to the broader masses of people with income from dividends.

Ignoring the imbalances in the labor market that can not only be increasingly exacerbated, will lead to an unprecedented increase in social inequality, which will trigger chain revolts (with incalculable effect: chaos, anarchy or even World War).

Theory of full employment is no longer viable, but rather it is used as a slogan by the political forces, which declares either an economic revival, due to technological and industrial development, will lead to progress in the full employment of labor, either the State, ultimately, will become increasingly concerned with finding resources to achieve this progress.

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