The identity and development of female teachers in technical education among young women and needlework teachers

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Abstract: The Mainobjective of Thisarticleis to Highlight Cybersecurity, As A Basis Forcreatinginnovation in The Company. Anyadvance In A Companytoday, With The Creation Of New Products, Servicesor Raw Materials, Withinnovation, Whichimplies The Use Of Informationtechnologies, Databases, Terminals As Servers, Must Be Connectedorsupported, With Software-Hardware Thatguarantee To Minimize The Theft Of The Resultinginformation, Orsabotagethataffectsclients And Businessmen, Withcomputerterrorismorblocking Of The Platformor Interface Software, Eitherwith The Endcustomerorwith The Companyitself.
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1. Introduction

Industrial and occupational control of VOCs is achieved through health and safety legislation, but in the indoor environment no standards exist, although guidelines have been suggested in many industrialized countries (e.g., the WHO has recommended a guideline concentration of formaldehyde of 0.1 mg m−3 as a 30-minute average). Control is most often achieved through good ventilation practice and by the regulated prohibition or restricted use of products that emit VOCs, such as insulation foams or particleboards.

2. The reasons for the downward trend in the rate of profit in the world capitalist system

What causes the profit rate of the global capitalism economy to be trending downward? These arguments, which Karl Marx outlined in Capital, are listed below. Karl Marx defined the worker's time in production as having two parts: the unpaid working time during which the capitalist gathers the excess of the worker's output as profit for his enterprise, and the socially required working time during which he is paid to ensure his and his family's subsistence. As a result, the working day is split between the excess labor that the capitalist does not compensate the worker for and the socially necessary work that the worker and his family need to survive.

The workispart of the Research projectdevelopedby the researcherfrom the Pilot University of Colombia, called "COMPANIES AS A REFERENCE IN THE MATTER OF INNOVATION AND INTERNATIONAL COMMERCIAL MANAGEMENT: a vision in front of the exchangesfrom Bogotá, Colombia." Withthisstudy, the toolcalled: "The Diamond of Innovation" has beenused, whichis the product of the studiesthat the author of thisdocument has done in the lastdecadeonbusinessmodels, publicpolicy, culture and education, fromSoutheast Asia, PR China and India.

Thanks to thiswork, ninebookshavebeen made from the collectionknown as the "AsianFirms" and aboutthirtyrelatedarticles. In the lasttwoyears, thisstudy made itpossible to create a toolthatassesses the situation of a country, group of countries, businesssectorsorcompanies in particular, in innovation, itisprecisely the "Diamond of Innovation". This, uses eightindicatorsorpoints of the Diamond, whichallows to detect the innovativesituation, allows to prioritize and proposestrategiesimmediately, short, medium and longterm in thissensefor a company, economic sector, country. One of theseeightpointsis Cybersecurity, whichis so importanttodaywithin COVID-19, given the exponentialgrowth of internet commerce.

$$l = m / (k + v)$$

Considering that the rate of surplus value is m´ = m / v, we will have m = m´v. Substituting m for m´v in the formula that calculates the profit rate we have:

$$l = (m´v) / (k + v)$$

Dividing the numerator and denominator by v, we have the rate of profit:

l = m´. 1 / (k / v + 1) = m´ / (k / v +1)

Considering that the organic composition of capital (coc) is the relationship between constant capital (k) and variable capital (v):

coc = k / v

we will have the profit rate expressed as follows:

l = m´ / (coc + 1).

The analysis of this formula shows that the profit rate (l) is proportional to the worker's exploitation rate (m' = m / v) and inversely proportional to the organic composition of capital (coc). To maximize profit, the capitalist seeks to increase surplus value (m), that is, surplus labor, reduce workers' wages (v) and increase the organic composition of capital (coc) with constant capital increase (k), that is, with the use of new technologies.

The incessant and impetuous technical development, driven by competition between capitalists, compels them to invest in machinery (constant capital = k) that allows them to produce the same with less time of "living labor" (variable capital = v). Therefore, in their pursuit of capital reproduction, capitalists tend to invest more in constant capital (k) and less in variable capital (v), tending to increase the organic composition of capital (coc) making the rate of profit tend decrease. Unemployment results from this greater investment in constant capital (k) to the detriment of variable capital (v), a fact that also makes it more difficult for capitalists to obtain surplus value.

Karl Marx says in The Capital that the rate of profit will tend to fall in the long run, decade after decade. Not only will there be ups and downs in each boom and crisis cycle, but there will also be a downward trend in the long run, making each boom shorter and each fall deeper. In this process, the post-crisis restructuring can restore the profit rate to its previous level until the increase in investment causes it to decrease again continuously. According to this point of view, there is a cyclical movement in the rate of profit crossed by acute restructuring crises.

To counterbalance the trend in the fall in the rate of profit under capitalism, the first neutralizing trend in the fall in the rate of profit explained by Marx is a more intense exploitation of labor with an increase in relative surplus value (m '). This has happened on a massive scale since the 1990s with the rise of neoliberalism in the world. In Britain, the manufacturing industry achieves the same level of production with one million fewer workers. Another action is the workday that has been extended. The weekly workday has been increased everywhere in the world in recent years. In addition, the working class is being pressured by the introduction of part-time work.

Falling wages below their value is another factor that also serves to offset a falling profit rate, in addition to the exploitation of female and child labor. The relative excess of the economically active population is another neutralizing factor in the fall in profit rates. You can see the massive growth of unemployment worldwide, which has now become a permanent feature that has served to lower wage levels and to cheapen the cost of the labor force in addition to increasing the excess working time, that is, surplus value for capitalists. The reduction in "wage costs" has been the main feature in recent years, while capitalists sought to increase their profits.

The lowering of constant capital (k) is another key factor in the process of neutralizing the downward trend in the capitalist system's profit rate, such as the increase in labor productivity that serves to lower the constant capital transferred to the product in the production process, despite the constant increase in its volume. Over the past 30 years, we have seen a dramatic drop in the value of the components of constant capital, especially with the use of new technologies. Falling prices for computer chips, for example, have cheapened computers, which are part of the constant capital used extensively in the economy. China has been a source of cheap goods that flood the world market. These cheap commodities in the form of steady capital have helped to increase the rate of profit under capitalism over the past three decades.

Foreign trade is also a means of cheapening the elements of constant capital as well as of introducing cheap goods abroad, which again serves to reduce the cost of the labor force. Capital investment in foreign countries,

where the organic capital composition is lower, also yields a higher rate of profit and an increase in the average rate of profit for those engaged in foreign trade.

Another way of mitigating the fall in the rate of profit under capitalism was the expansion of the world market ("globalization") which allowed a massive increase in investment, production and sales. There was a massive increase in capital exports. The collapse of the Soviet Union and the restoration of capitalism in Russia, Eastern Europe and China provided capitalism with new markets and areas of exploitation. This allowed around two billion people to enter the world capitalist market. The liberalization of the market in the peripheral and semi-peripheral capitalist countries, including the privatization of basic public services, also opened up possibilities for new investments, all of which made it possible to increase the rate of profit during this period.

In spite of all these attempts adopted to raise the rate of profit in capitalism, what is observed is the tendency of its fall that can be verified with the analysis of Figures 1 and 2 presented in topic 3 of this article.

3. Demonstration of the end of the world capitalist system in the middle of the 21st century

The world capitalist system will end between 2057 and 2059 because it would have a zero profit rate in the middle of the 21st century according to the data in Figure 1 and Figure 2 and a zero World Gross Product growth rate in 2057 according to data from Figure 3 shown below.

Figure 1 shows the evolution of the profit rate of the world capitalist system from 1869 to 2007, indicating its decline in this period. If the trend of the period 1869-2007 is maintained, the profit rate of the world capitalist system would tend to the value equal to zero in 2059, a value calculated based on the least squares method of Statistics.

Figure 2 shows the decline in the rate of profit at the historical cost of fixed capital for US corporations from 1947 to 2007. Assuming that this trend is maintained in the coming years, the profit rate of US corporations will reach zero in 2059, a value calculated based on the least squares method of Statistics.

Figure 3 shows the decline in the growth rate of the World Gross Product from 1961 to 2007. Assuming that this trend is maintained in the coming years, the growth rate of the World Gross Product will reach zero in 2057, a value calculated based on the least squares method of Statistics.
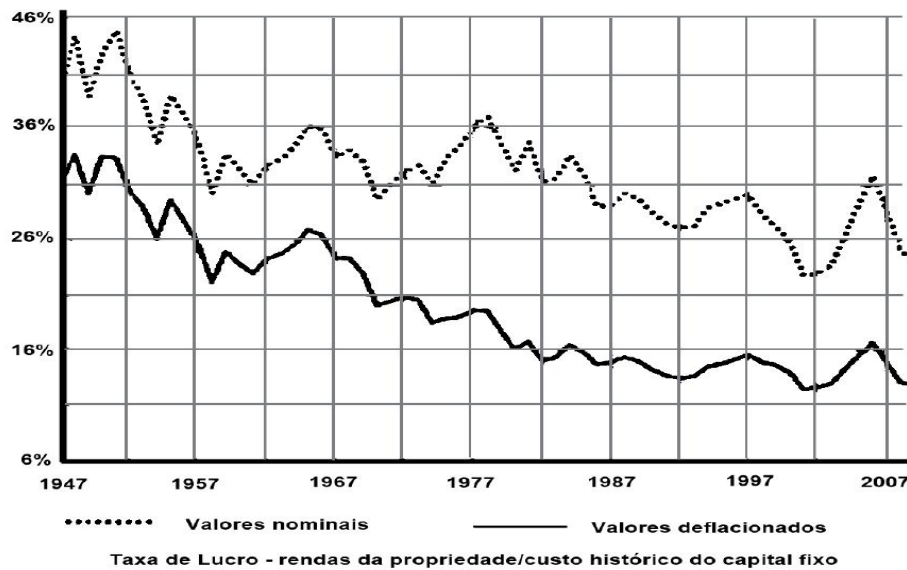
Figure 1- World profit rate
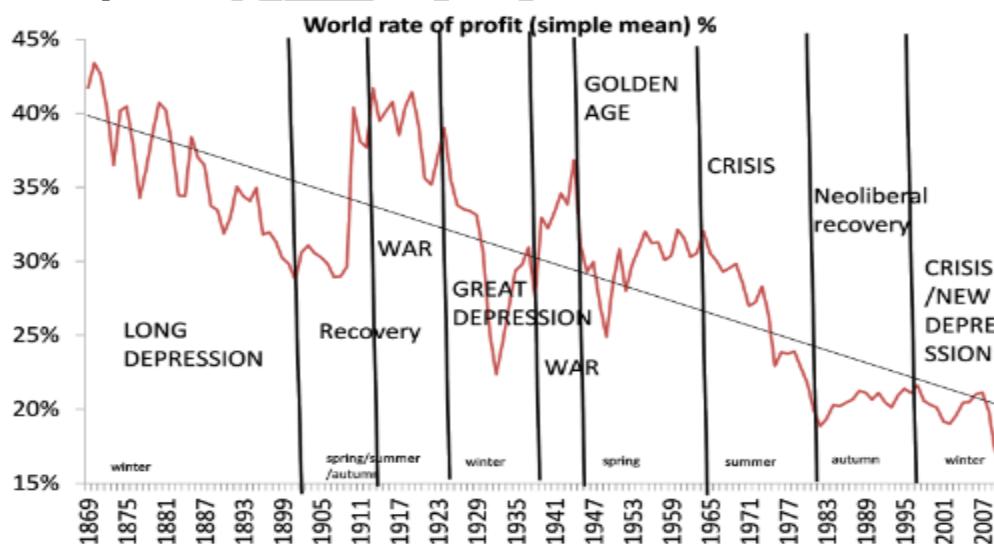
Source: <MICHAEL ROBERTS BLOG. It's a long-term decline in the rate of profit - and I am not joking! Available on the website https://thenextrecession.wordpress.com/2015/06/01/theres-a-long-term-decline-in-the-rate-of-profit-and-i-am-not-joking/.

Figure 2- Profit rate at the historical cost of fixed capital in US corporations

Source: KLIMAN, A. The failure of capitalist production: underlying causes of the great recession. London: Pluto, 2012.

Figure 3- Real growth rates of the World Gross Product and Financial Products (derivatives)
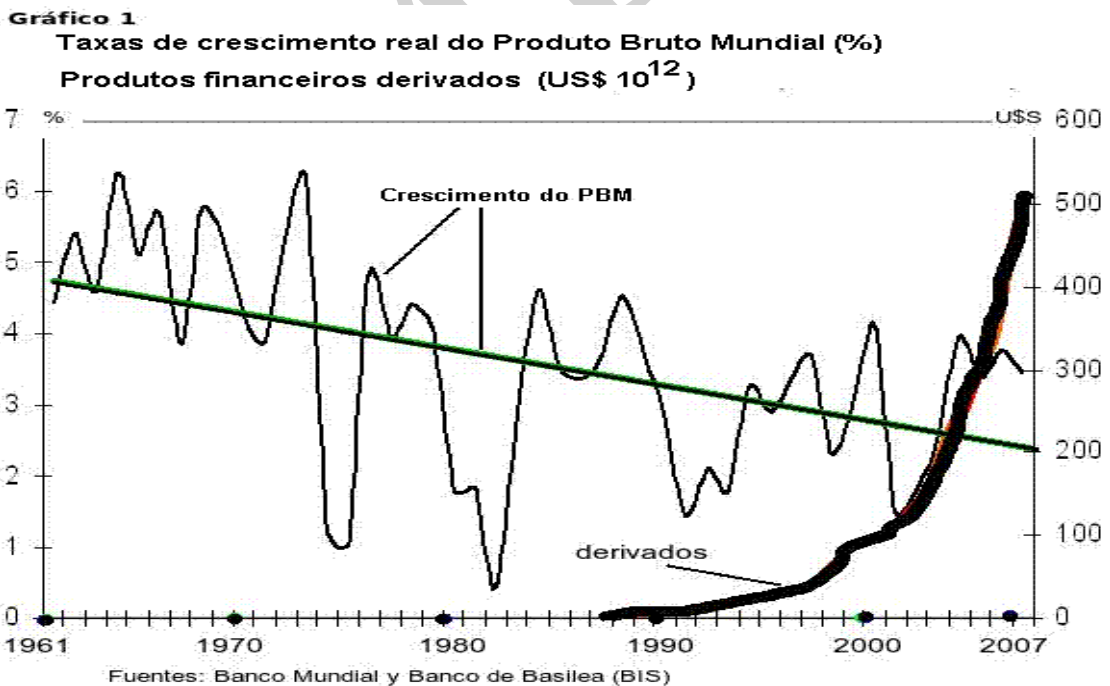
Source: BEINSTEIN, Jorge. Rostos da crise: Reflexões sobre o colapso da civilização burguesa(Faces of the crisis: Reflections on the collapse of bourgeois civilization). Available on the website <http://resistir.info/crise/beinstein_04nov08_p.html>, 2008.

Figures 1, 2 and 3 lead to the same conclusion: the world capitalist system will end in the middle of the 21st century when it would be rendered unfeasible by having negative profit rates and growth rates of Gross Product, also negative. Thus, the bases of Marx's theory on the evolution of capitalism are being confirmed by stating that the decreasing trend in profit rates in the world capitalist system shows the historical, transitory character of

the capitalist mode of production and the conflict that is established with the possibilities to continue its development (MARX, Karl. Capital. Rio de Janeiro: Civilização Brasileira, 1999).

4. Resultados e discussão

At the moment there is a great effort to mitigate the tendency of the fall in the rate of profit, to avoid the end of capitalism and to assure its vitality with scientific and technological advance. There is a belief that scientific and technological advances would be able to restructure capitalism to prevent its end by making the production processes of the future characterized by having facilities full of robots and a high degree of automation, in addition to being properly organized around technology, the computer, which would integrate, by specially developed software, practically all activities.

Scientific and technological advances will not be able to save capitalism from its predicted end to occur in the middle of the 21st century for the reasons that will be described below. If we take into account that, according to Karl Marx, the rate of profit is measured by the formula below:

$$l = m´ / (coc +1)$$

where the rate of surplus value is m´ = m / v and the organic composition of capital is coc = k / v, m´ being the rate of surplus value or exploitation of workers, m corresponds to the value of surplus labor not paid by capitalist to the worker, v refers to expenditure on wages, k represents the constant capital (means of production, raw materials, energy, etc.) used in production and coc corresponds to the organic composition of capital, the consequences of automation on the capitalist system would be as follows:

i. Automation contributes to significantly increase constant capital (k) with investments in automated machines and installations and significantly reduce (v) with the dizzying fall in labor and wage expenditure, which causes the organic composition of the capital (coc = k / v) rises considerably. This situation causes the profit rate denominator (l) to be raised significantly with the increase of k and the reduction of v.

ii. To compensate for the increase in the profit rate denominator (l), its numerator (m´ = m / v) would have to rise enormously, which would compel the company to significantly increase the capital gain (m = unpaid surplus labor) of the remaining workers. The rate of exploitation of the remaining workers would have to increase for the company to maintain or raise its rate of profit.

iii. In practice, it would be impossible to have a fully automated factory, that is, without workers because the company would need people to supervise the operation and carry out the maintenance of automated machines and equipment. The exploitation rate of these workers (m´) would have to be raised to the maximum to ensure high profit rates for the company.

iv. Theoretically, if we admit that v = 0, this is a factory without workers, coc = k / v = k / 0 = infinite contributing so that the denominator of the profit rate (coc + 1) is equal to infinite. In turn, being the added value (m = 0), this would result in m´ = m / v = 0/0 = undetermined value. The rate of profit would tend to be undetermined.

It can be seen, from the above, that automation is positive for the capitalist because it would start to face its competitors in a more competitive way, considering that it would provide, among other advantages, the increase of its productivity and the reduction of its costs. However, it would be extremely negative for the capitalist because it tends to reduce the profit rate of his business. In addition, automation that does not happen only in industry, but that spreads across commerce and the service sector, tends to reduce the income available to the mass of workers excluded from production, thus contributing to the under-consumption of the masses. As a consequence, there would be a fall in the demand for products and services due to the increase in unemployment and a fall in the workers' income, which would also damage the capitalist system as a whole. Society would also be severely damaged because automation would contribute to the increase in the army of unemployed people with the worsening of social tensions.

It is important to note that automated and robotic production processes mean that fewer and fewer people are employed. In three decades, 6 million industrial jobs have been eliminated in the United States, making employment in factories reach the level of the 1940s. Many jobs involving the functions of skilled and unskilled workers will disappear rapidly in the years to come. In rich countries, it is estimated that 25% of all functions in the industry are expected to be replaced by automation technologies by 2025. In the world, it is estimated that 60 million factory jobs will be eliminated.

5. Conclusion

It is proven, by the above, that the world capitalist system will come to an end in the middle of the 21st century and that all attempts to avoid its end will be frustrated even with the scientific and technological advance applied to the productive activity.

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