

THE TWENTY-FIRST CENTURY AND A NEW WORKING CLASS ARRANGEMENT: QUALIFICATION AND PRECARIZATION

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Abstract

This paper will analyze capitalist technical innovation process, in light of Marxist theory and basing debate in critique to neo-Schumpeterian school, essentially the one made by authors Christopher Freeman and Carlota Perez. Limits to this neo-Schumpeterian approach are in not enunciating technical changes to the theory of value, historical basis of technological dynamism of capitalism. Empirical data shown represents partial results of the ongoing research. Conclusions point to growth of the working class in capitalist world during twenty-first century. However, such growth is based in new working relationships whose prevailing features are flexible working together with salary flattening and professional qualification message.

Keywords

Technological innovation, neo-Schumpeterian, theory of value, working class.

Introduction

Theory of flexible accumulation (HARVEY, 1992; 2011) brought profound changes to the world of work, among others: huge structural unemployment, increasing number of workers facing job instability and hyper-exploitation, all this result of social changes, oriented to production of goods and capital appreciation.

Taylorism Fordism accumulation crisis started in second half of decade of 1970, compelled companies to find a more complex, heterogeneous and multi-functional workforce, to be exploited in more intense and sophisticated way by capital (ANTUNES, 2000; 2002). Therefore, productive restructuration

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process is really nothing more than capital restructuring, to grant its expansion and accumulation.

In every step taken to introduce technical and/or organizational innovations, there is an opportunity to overcome ways of resisting labour exploitation controls (MILKMAN, 1997; BIHR, 1998). More and more, companies benefit from neoliberal work deregulation to modify relations with working class via intensifying flexibilization processes, including such practices as outsourcing and subcontracting, temporary and group work and inflicting heavy defeats to trade-union movement born under Taylor-Ford practices. For Harvey (2011: 16), “[...] neoliberalism legitimates draconian practices aiming to restore and consolidate capitalist class power”.

Taking this into account, present paper will analyze technical innovation process within productive capitalist process in light of Marxist theory and basing debate in critique to neo-Schumpeterian school, essentially the one made by authors Christopher Freeman and Carlota Perez. Limits to this neo-Schumpeterian approach are in not enunciating technical changes to the theory of value, historical basis of technological dynamism of capitalism. Empirical data shown represents partial results of the ongoing research. Conclusions point to growth of the working class in capitalist world during twenty-first century. However, such growth is based in new working relationships whose prevailing features are flexible working together with salary flattening and professional qualification message.

1. Technical Innovation and Work in Capitalism

Neo-Schumpeterian authors, highlighting Freeman and Perez, in 1988 (Carlota Perez, former student of Christopher Freeman with whom she closely collaborated) and again Perez in 2002, stated that diffusion of technology is associated to its potential to transform economic sectors and encourage formation of new others, driving development to a new technical and economic paradigm and starting an advanced development cycle. The innovation process consists, on one side, by the wake of a crisis, and on the other, by recovering from this crisis when industrial sectors and socio-institutional structures move and adapt to innovations. Or in Freeman & Perez words (1988: 59):

“[...] it is evident that this is a transitional period characterized by a deep structural economic change, demanding equally profound transformations in social institutions. The perspective of a prolonged recession is a signal of the increasing level of bad combination between the technical economic subsystem and old socio-institutional structure”.

Post-World war II Taylorism Fordism predominant technological regime was based in low oil costs and intensive use of energy and materials in econo-

mic sectors, particularly the automotive sector (MILKMAN, 1997; BIHR, 1998). From an organizational point of view, assembly line arrived to factories, while in management areas it was the time of great corporations, including research and development departments (R&D) acting in oligopolized markets. This new profile demanded a large number of low-skilled workers, the so called “mass worker”, performing only one part of a task, not related to the whole and therefore without any content and sense for the worker.

According to neo-Schumpeterian approach, at the end of the 1970's, capitalist advanced economies started a transition phase to reach a new technological paradigm since a particular basic input – the microelectronics based technology – that was rapidly spread in economic sectors. During this “transition” period, economic changes demanded modifying institutional structures, up till now adequating and regulating social, economic and political relationships in previous system. Regarding work, a new more flexible labour market arose, demanding higher levels of education and new skills.

The authors consider crisis as an “adjustment” period³ where social and political changes within the institutional environment must be present to consolidate the new paradigm and regulate the new order, based in micro-electronics and information technologies. Sharing this vision and to promote a more flexible labour market, governments of several countries are developing economic and social adjustment neoliberal policies having direct impact in the working class, cancelling rights acquired after long fights, through deregulation of labour relations and reducing social security benefits.

Financial markets integration generated an intense capital productive restructuration process, based in a new neoliberal political free trade ideology and lesser State presence as capital-labour relationships regulatory power. In this context ILO data from 2012 shows that poverty rate increased in half of economically developed countries and in one third of developing economies countries. Inequality also increased in half of countries with developed economies and one quarter in countries with developing economies.

Neo-Schumpeterian authors consider that technology is independent and autonomous regarding social and institutional relations, granting a deterministic and neutral character to a process not only technical, but also of social transformation. (TOMANEY, 1996; PREVITALI; FARIA, 2008). The relation between technical change and socio-institutional adjustment grants a subordinating position from last to first one, making set of socio-cultural and class relations depending from technical attributes, when reality is otherwise: technical inserts in the broader context of production and its way of capital accumulation (ANTUNES, 2013).

For capitalism, labour process is a capital appreciation process, where main objective is increasing surplus value production. The issue is how capital can increase surplus value production independently of increasing working hours. It is possible through a reduction of working week - the part of

³ Our emphasis.

time worker needs for own use – and increase in work, corresponding to the capitalist's working hours. Therefore capital will increase working productive force "[...] through changes in ways of working or in working methods or in both" (MARX, 1988: 238) and capital appreciation process is established through relative surplus value.

Then, capital will perform relative surplus value through a process of changes in means of production and labour organization methods by applying technologies, generating goods values and workforce reduction. Capitalists get an individual incentive to reduce working time through undervaluing goods due to other capitalists' competition. Therefore it is competition what makes the capitalist transforming technical and organizational working process conditions through appropriation of workers expertise (MARX, 1988).

If a capitalist introduces innovations in productive process, he can appropriate most of the working day to do an additional work than other capitalists could not yet do. However, that extra surplus value, obtained when individual capitalist gets higher profit than the rest, disappears as innovation widespread in capitalist economy (MARX, 1988). On one side, productive labour force increase will spread through production areas, undervaluing goods, and on the other, reducing workforce.

This creates an intrinsic incentive for capitalist production way, making capitalist be interested in investing in new production and organization working techniques, modifying combined productive forces (MARX, 1988). Submitted to the logic of interests of capital, science is transformed in technology, becoming a powerful lever of labour exploitation, and therefore of capital reproduction in extended scale (MARX, 1988; BRAVERMAN, 1981; ANTUNES, 2002; ANTUNES, 2013).

A complex and contradictory inter-relation is created between science and value as its potential is limited by class determination. According to Antunes (2002: 54):

"[...] thesis arguing about precedence of science and techniques as productive forces in contemporary societies may be criticized, because at the same time in which science is released by capital to expand, it ultimately is subordinated to exchange-value creation process requirements".

Antunes states that theory of value recognizes increasing role of science, but he stresses that is hampered in its development by material basis of relations between capital and work, and cannot become main productive force to substitute work. Antunes analysis (2002 e 2013) converge with Mandel (1985) when he argues that choices regarding certain techniques and not others, are made based in profit reasons on specific sectors of industry, or by leading companies of these sectors. Therefore they depend on power relations of core capitalist society.

Introduction of technological and organizational innovations in productive process is a constant in capitalist production way, and has no connections with natural, neutral or autonomous issues. The innovation process must be understood within the environment of different social practices, which at the time are the result of class relations in struggle for social control of work in capitalism. It is part of class struggle dynamics, being a political and social control variable. (MANDEL, 1985; ANTUNES, 2002, ANTUNES, 2013; PREVITALI; FARIA, 2008). Fight against workers resistance to control and rationalization demands constant reorganization of productive process. (BRAVERMAN, 1981).

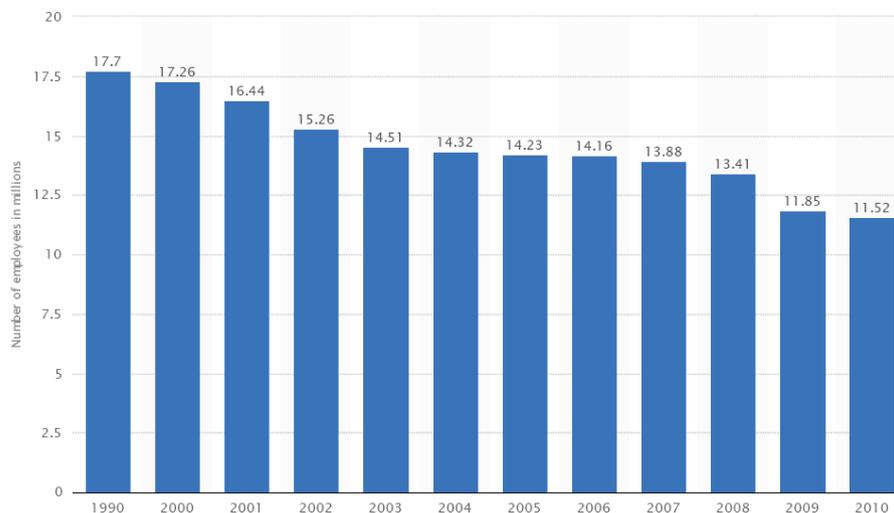
Therefore, main obstacle to neo-Schumpeterian approach is not relating technological paradigm concept and even technical change of theory of value, historical basis of order of capital in technological dynamism.

2. New labour relations

According to ILO data, in 2013 202 million were unemployed around the world. Among economic sectors most suffering with unemployment, industry highlights. Only in United States manufacturing jobs shrinking was around 35 pct for period 1990-2010. See down here in Chart 1.

Chart 1 -

Number of employees in U.S. manufacturing from 1990 to 2010 (in millions)



Source: Statista 2014.

Unemployment, together with neoliberal deregulation policies, imposed strong defeats to union movement born under Taylorism Fordism practices. In United States, between 2000 and 2012, sindicalization rates were reduced in 2.4 pct. See down here in Chart 2.

Chart 2

Percentage of employees represented by unions in the United States from 2000 to 2012

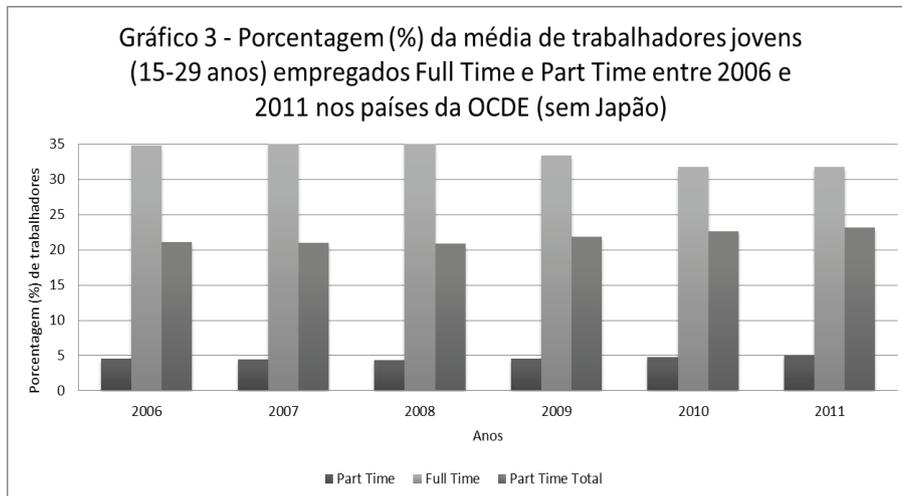


Source: Statista 2014.

This new companies and working classes relationship began at the end of the 1980's. Productive restructuring led to an industrial proletariat stable and an specialized reduction trend, developed during Taylorism Fordism (ANTUNES, 2002; ANTUNES, 2013; PREVITALI; FARIA, 2008). At the same time, new intercompany relations were created in many productive chains through de-verticalization, horizontalization and deconcentration of production physical space processes, involving such practices as outsourcing and subcontracting, temporary work, or for short periods and in partial time (PREVITALI; FARIA, 2008; VARELA, 2013; ANTUNES, 2002; ANTUNES, 2013).

New labour relations imposed workers an intense and detailed electronic monitoring through constant analysis of productivity, performance and satisfaction levels among others, introducing workers qualification, and a way of improving its intellectual integration in work. From the 1990's and especially during current decade, in OECD countries⁴ there is an increasing trend of hiring workers in part time, with consequent full time decrease in full time. See down here in Chart 3.

Chart 3 - Average percentage of young workers, between 15 and 29 years, hired full and part time, between 2006 and 2011 in OECD countries, except Japan.

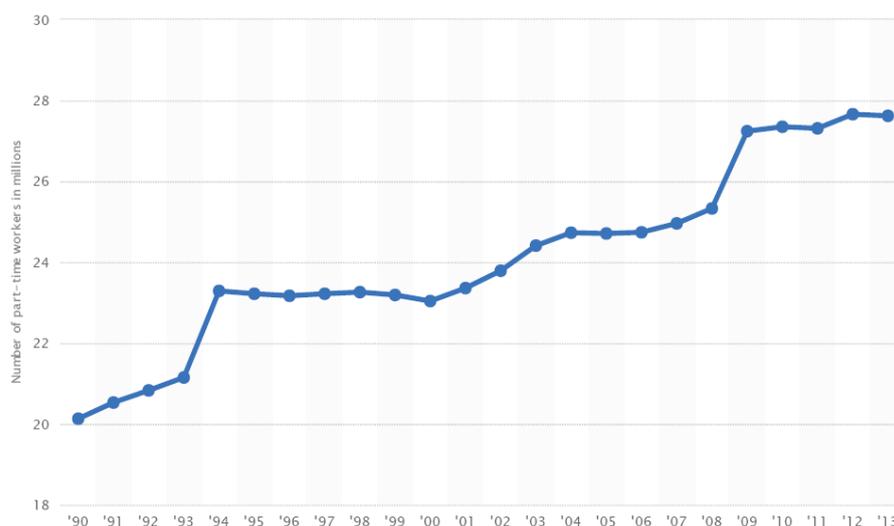


Total Part Time relation with total number of workers

Source – Chart base in OECD Report: Education at a Glance 2013.

Specifically in United States, number of part time workers increased around 37 percent between 1990 and 2013, in following:

Chart 4 – Number of part-time employees in the United States from 1990 to 2013.



Source: Statista 2014.

These strategies, corresponding to work and unions controls within class struggle environment (Braverman, 1981), fragment workforce and flatten wages, deregulate labour in name of flexibility and consequently reduce labour rights.

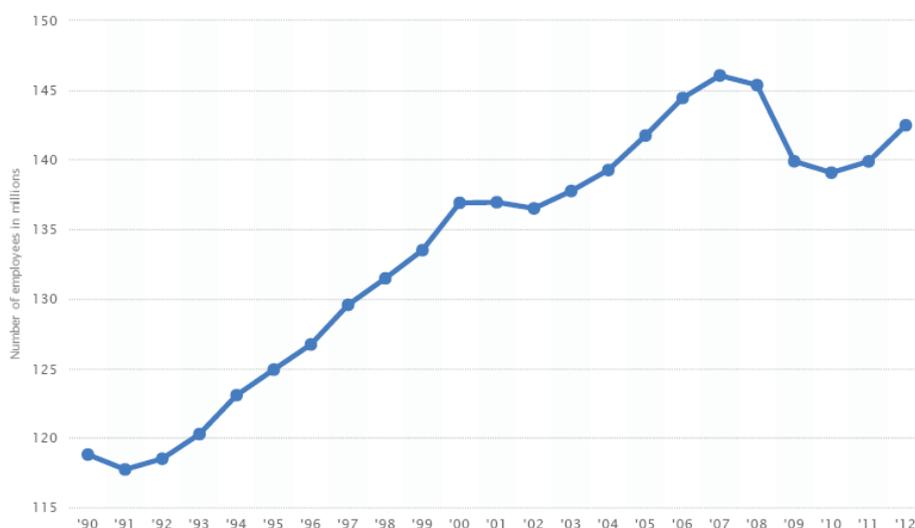
According to ILO 2013 report, among whole world mass of workers, 375 million of them earn less than US\$ 1.25 a day, while other 839 million get less than US\$ 2 a day.

At the same time, world income concentration has increased. The ILO 2013 report states that around 10 pct of world population controls 86% pct of global assets, while 70 pct of the poorer control only 3 pct. The 85 largest fortunes in the world account for US\$ 1.7 trillion, same income than half of world population. "Global elites are becoming wealthier while most of world population is excluded" states ILO report. Ten richest European countries have fortunes equivalent to all country's rescue packages of the region between 2008 and 2010. In USA, 95 pct of growth generated after 2008 crisis remained in hands of 1 pct of population.

It is worth mentioning that working class has significantly increased in contemporary societies, contradicting thesis endorsing end of work and its substitution by technologies. We observe that from last decades of the twentieth century and beginning of the twenty first, a new way of work rationalization process is arising. In this context, technological and/or organizational changes associated to Toyotism are introduced as being more efficient and rational to perform the productive process, and to allow breaking down undesirable excesses of Taylorist Fordist organization (PIORE; SABEL, 1984; WOMACH, et alli, 1989) since they would allow recovering worker's intelligence in the workplace.

In United States, employment growth was around 20 pct for the period 1990 to 2012. See down here Chart 5.

Employment level of the United States from 1990 to 2012 (in millions)



Source: Statista 2014.

We have seen creation of a new productive model, creating jobs associated to new technologies, however with lower wages and in worse working conditions, strongly contributing to income concentration.

According to World Bank and IMF, global number of workers grew 70 pct, especially in sectors bound to provision of services, highlighting construction industry and household employees (Table 1). In the case of Portugal, although government states reducing civil servants, we can observe there is *substitution* of permanent civil servants by others with fixed-term contracts, implying in labour relations precarization. In first half of 2013, both Central Administration and Ministry of Economy, substantially increased number of hired employees.

Table 1 –World working class growth between 2002 and 2013, by economic sectors and countries

Source	Year and number of workers	Sector	Coverage
Site: statista.com	2002 – 3,505.919 2013 – 4,064.147	Fast food	United States
Site: Ministry of Labor	2006 - 1,388.958 2011 – 2,762.156	Construction industry	Brazil
International Trade Union Confederation	2012 – 1,2 million 2022 - 2,2 million	Construction industry	Qatar
Department of Administration and Public Employment. Portugal's DGAEP	Contracts during first half 2013: +6912 ≥ (68.5 pct) + 7107 ≥ (101.5 pct)	Civil servants, Central Administration and Ministry of Economy and Labour	Portugal
PORDATA	1998 – 4,844 million 2012 - 4,635 million	Private employees	Portugal
Site: ISS	2013 – 530,000	Services	Global, 60 countries
Site: Statistic Brain	2009 – 14,300 2010 – 46,600 2011 – 60,400	Information technology	Global
Site: ILO	1995 – 33 million 2010 – 53 million	Household employees	World, except data from China
World Bank / IMF	1980 – 2,0 billion 2005 – 3,4 billion	Formal, informal, employees, permanently and temporary unemployed	
World Bank / IMF	1980 – 225 million 2005 – 900 million	Global workers involved in the production of goods and export services which emigrate to work	Global

Under the auspices of multifunctional work, many times in same workplaces, stable and outsourced workers, intellectual and manual share activities (PREVITALI et alli, 2013; ANTUNES, 2002; ANTUNES, 2013).

Highly skilled and intellectualized work based in relative surplus value is –sometimes – still combined in complex and contradictory ways, with work

done in super-exploitation and precarization conditions, intensive to obtain from it absolute surplus value, in most diverse productive chains, as it is the case of sugar and ethanol agro-industry (PREVITALI et alli, 2013).

Therefore, a combination of elements including flexible forms of employment and subjective behavioral elements become capital to grant control, discipline and consent of this new worker at the workplace and also out of it, from a new arrangement configuration, establishing in a dynamic and dialectical relation, new social, cultural and educational relation ways.

Kuenzer (2003) stresses that characteristics demanded by the new flexible worker include development of superior cognitive and relations skills, such as: capacity for analysis, synthesis, creativeness, response speed, clear and accurate communication, interpretation and use of different *language registers* varying according to the speaker's social class, ability to work in groups, lead and manage processes to achieve targets, work prioritizing tasks, evaluate, dealing with differences, face challenges of permanent changes and always try to learn.

Fight for specialization is encouraged by the idea that new worker must have a higher school attendance level and be more qualified. New education is oriented by following concepts: multi-functionality, flexibility and employability, to create a worker's individual process of formation, where each person will be responsible for finding competences to be reached, according to neoliberal ideas, by developing basic, specific and management skills (MACIEL; PREVITALI, 2011).

Braverman (1981), states that term qualification suggests mastering a technique apprehended after years of training. The author mentions the example of a coachman that besides having skills to manage the horses must also know details regarding the coach, how to manage both of them, etc. Nevertheless, if time needed to become a skilled coachman would be longer than time needed to become a chauffeur, this would be considered more qualified. This, because as Braverman (1981) stresses, valorization of qualification is always related to momentary market needs, and not to the knowhow of a trade and does not bring any guarantee for the worker. Braverman thinks that a qualified/complex work is worth as a superior work when compared to a not qualified/simple one, because it is in true manifest of workforce where higher formation costs are since demand more working time, and therefore have higher value. If value of this workforce is superior, its objective in same periods of time, will be reaching higher values proportionally values.

3. Conclusion

As we have seen here above, technical innovation must be understood as related to different social practices, which at the time are result of class relations in struggle for controlling labour in capitalism, since it generates value. Capitalism driving force is work, which develops technology. This, at the time,

has a restricted potential due to its class determination, subordinated to a process of creation of exchange values.

Current reality at workplace is characterized by higher intensification, flexibilization and precarization of working conditions, compelling flexible workers submitting to long working days, overtime without pay, because these hours become bank of hours to be used in leaves when the company has to reduce production, multi-functionality to perform different tasks and knowing how to operate several types of machines and equipment, besides skills favoring initiatives, cooperation and work in groups.

As number of available workers increase and job offers decrease, competition among workers becomes higher, less fair and more violent. On the other side, the capitalist benefits from this competition, hiring better qualified workers paying less wages and benefits, contributing to losing workers class sense and bringing a generalized income flattening (MARX, 2010).

The more evident consequence of this process is growing individualization in workers, socially weakening them and contributing to the impairment of union actions, at the same time that it becomes capital the collective building of new practices of resistance. This implies that thesis stating social work loss of meaning are far away from being confirmed.

Great challenge today faced, both in theory and practice, is apprehending specifically capitalist relation of production and understand how exploitation process in productive relations, trying to demystificate mental and manual work re-integration concepts, of substituting work by science and more qualification.

To conclude, contemporary work reality results from the way it is developed under capitalism: human activity is substituted by machines, “[...] throwing part of the workers backward into barbarian work, transforming them into machines” (MARX, 2010: 82).

Bibliographic References

ANTUNES, R. “A classe trabalhadora hoje, e a Nova Morfologia do Trabalho: informalidade, info-proletariado, imaterialidade e valor”, IN: Varela, R. (coord). A Segurança Social é Sustentável. Lisboa: Bertrand Editora. 2013. p. 337-362.

ANTUNES, R. Os Sentidos do Trabalho. São Paulo: Boitempo. 2002.

APPLE COMPUTER COMPANY STATISTICS. Disponível em: <http://www.statisticbrain.com/apple-computer-company-statistics/>. Acesso em 13 de jan. 2014.

BIHR, A. Da Grande Noite à Alternativa: o movimento operário europeu em crise. São Paulo: Boitempo. 1998.

BRAVERMAN, H. Trabalho e Capital Monopolista. Rio de Janeiro: Zahar. 1981.

CADASTRO GERAL DE EMPREGADOS E DESEMPREGADOS (CAGED) DO MINISTÉRIO DO TRABALHO E EMPREGO. Disponível em: <http://www.mte.gov.br>. Acesso em: 08 de Jan. de 2014.

FREEMAN, C.; PEREZ, C. "Structural Crises of Adjustment, Business Cycles and Investment Behavior", IN: DOSI et all (Eds). Technical Change and Economic Theory. London: Pinter Publishes. 1988.

GLOBAL EMPLOYMENT TRENDS FOR YOUTH 2013: A generation at risk / International Labour Office - Geneva: ILO, 2013. Disponível em : http://www.ilo.org/global/research/global-reports/global-employment_trends/youth/2013/lang--en/index.htm. Acesso em: 23 de Jan. 2014.

GLOBAL ESTIMATE OF FORCED LABOUR. Annual Report ILO (2012). Disponível em: www.ilo.org/forcedlabour. Acesso em: 5 de Jan. 2014.

HARVEY, D. Condição Pós-Moderna. São Paulo: Edições Loyola. 1992.

HARVEY, D. O Enigma do Capital: as crises do capitalismo. São Paulo: Boitempo. 2011.

INTRODUCTION TO ISS. <http://www.issworld.com/en/about-iss/introduction-to-iss/fact-sheet>. Disponível em 12 de Jan. 2014. Acesso em: 18 de Jan. 2014.

KUENZER, A. Z. Educação profissional: categorias para uma nova pedagogia do trabalho. 2003. Disponível em: <http://www.senac.br/BTS/252/boltec252b.htm>. 2003. Acesso em: 10 de Fev. 2011.

Maciel, R. M. & Previtali, F. S. Impacto das Políticas Públicas do Trabalhador da Educação na Rede Estadual de Ensino de Patos de Minas / MG em 2011. Revista Labor. 2011. (6). p. 326-343.

MANDEL, E. O Capitalismo Tardio. Coleção Os Economistas. São Paulo: Abril Cultural. 1985.

MARX, K. O Capital. Vol.1 2. São Paulo: Nova Cultural. 1988.

MARX, Karl. Manuscritos econômicos e filosóficos de 1844. Tradução Jesus Ranieri. São Paulo: Boitempo. 2010.

MILKMAN, R. Farewell to the Factory: auto workers in the late twentieth century. Los Angeles: University of California Press, Berkeley. 1997.

NUMBER OF EMPLOYEES IN THE US SINCE 1990. Disponível em: <http://www.statista.com/statistics/192384/number-of-employees-in-the-us-since-1990>. Acesso em: 15 de Jan. de 2014.

NUMBER OF EMPLOYEES IN US FAST FOOD RESTAURANTS SINCE 2002. Disponível em: <http://www.statista.com/statistics/196630/number-of-employees-in-us-fast-food-restaurants-since-2002/>. Acesso em: 15 de Jan. de 2014.

NUMBER OF EMPLOYEES IN US MANUFACTURING SINCE 1990. Disponível em <http://www.statista.com/statistics/184562/number-of-employees-in-us-manufacturing-since-1990>. Acesso em: 10 de Jan. de 2014.

NUMBER OF PART TIME EMPLOYEES IN THE US SINCE 1990. Disponível em: <http://www.statista.com/statistics/192338/number-of-part-time-employees-in-the-us-since-1990>. Acesso em: 12 de Jan. 2014.

OCDE INDICATORS. Disponível em: [http://www.oecd.org/edu/eag2013%20\(eng\)--FINAL%2020%20June%202013.pdf](http://www.oecd.org/edu/eag2013%20(eng)--FINAL%2020%20June%202013.pdf). Acesso em: 12 de Jan. 2014.

PAÍSES EMERGENTES REÚNEM MAIOR NÚMERO DE DOMÉSTICAS. Disponível em: http://www.bbc.co.uk/portuguese/noticias/2013/04/130404_oit_emergentes_fl.shtml. Acesso em: 15 de Jan. 2014.

PERCENTAGE OF EMPLOYEES REPRESENTED BY UNIONS IN THE US SINCE 2000. Disponível em: <http://www.statista.com/statistics/195341/percentage-of-employees-represented-by-unions-in-the-us-since-2000/>. Acesso em: 10 de Jan. 2014.

PEREZ, C. Technological revolution and financial capital: the dynamics of bubbles and golden ages. London: Cheltenham/Elgar. 2002.

PIORE, M.; SABEL, C. The Second Industrial Divide - possibilities for prosperity. New York: Basic Books. 1984.

PORDATA AMBIENTE DE CONSULTA. Disponível em: <http://www.pordata.pt/Portugal/Ambiente+de+Consulta/Tabela>. Acesso em 18 de Jan. 2014.

PORTUGAL: NÚMERO DE TRABALADORES A RECIBOS VERDE NA ADMINISTRAÇÃO CENTRAL AUMENTA 68,3%. Disponível em: <http://www.diarioliberalidade.org/portugal/laboral-economia/43198-portugal-n%C3%BAmero-de-workers-a-recibos-verde-na-administra%C3%A7%C3%A3o-central-aumenta-68,3.html>. Acesso em 16 de Jan. 2014.

PREVITALI, F. S.; FARIA, A. F. Reestruturação produtiva e novas formas de controle no local de trabalho: a experiência da indústria de fumo em Uberlândia-MG. *Antíteses*. 2008. 1(1). p. 95-117.

PREVITALI, F. S.; MORAIS, S. P.; FAGIANI, C. C. "Ethanol workers in Brazil: the other side of wealth", *Workers of the World*, v. 1. 2013. p. 227-245.

QATAR WORLD CUP MIGRANT WORKERS DEAD. Disponível em: <http://www.theguardian.com/global-development/2013/sep/26/qatar-world-cup-migrant-workers-dead>. Acesso em: 18 de Jan. 2014.

TOMANEY, J. A "New paradigm of Work Organization and Technology?", IN: AMIN, A (Org). *Post-Fordism*. Oxford: Blackwell. 1996.

VARELA, R. "Ruptura e Pacto Social em Portugal (1974 – 2012)", IN: PREVITALI, F. S. (Org). *Novos Contornos do Trabalho, Educação e Alienação no Século XXI*. São Paulo: Xamã. 2013. p. 49 - 70.

WOMACK et al. *The Machine that Changed the World*. New York: Rawson Associates. 1990.