Transformation in the U.S. Labour Market Artificial Intelligence and Occupational Polarization in the 21st Century

Ananiades, Eduardo and Antunes, Daví

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EIGHT INTERNATIONAL ASTRIL CONFERENCE THE FUTURE OF WORK: TECHNICAL PROGRESS, ARTIFICIAL INTELLIGENCE AND WORKING TIMES

Eduardo Ananiades
Daví José Nardy Antunes

The improvements in artificial intelligence (AI) and data processing technologies have renewed the question posed by John M. Keynes in *Economic Possibilities for Our Grandchildren*. Particularly regarding the expectation of human emancipation from material survival as a result of technological progress, the possibility of seeking purpose and fulfillment is revived. However, new technologies have driven the economy towards an ontological reduction that subordinates the human being to abstract economic relations, reducing labor and work to exchange-value. Hence, labour ceases to be a process aimed at satisfying concrete needs and becomes, instead, an economic function restricted to the market and production. This paper is organized into two primary sections. The first provides a diagnosis of the U.S. labor market, which is characterized by an increasing polarization between high- and low-skill occupations, alongside a narrow labour structure of typical middle-class jobs. The segmentation of the labor market takes shape as the manufacturing sector loses its centrality and the service sector becomes more significant to the U.S. economy. This dynamic unfolds as financial deregulation and neoliberal policies shift economic structures toward speculative wealth accumulation, diminishing industrial job opportunities and polarizing the labor market into highly skilled, well-paid roles and precarious, low-skilled positions. The second section examines how AI technologies have transformed the tasks performed by certain jobs and the hierarchical and economic interaction within firms, altering the qualification requirements, especially for corporate-level jobs. The competition for high- and low-skill occupations intensifies. In the first case, the demand for constant updating of technical competencies and knowledge to complement AI systems increases. For low-skill occupations, fierce competition takes place due to the simplification of tasks, allowing less-skilled workers to perform the same functions. Therefore, the integration of AI into the labor market exacerbates wage disparities and affects opportunities both across and within different

segments of the working class, increasing the demand for highly skilled workers while simultaneously reducing opportunities for those in low-skilled positions.

Keywords: United States — 21st Century, Artificial Intelligence and Technological Transformation, Labor Market, Labor Market Polarization, 4.0 Technologies — Impacts on the Labor Market

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The Economic Problem and the Technological Shift

In *Economic Possibilities for Our Grandchildren*, John M. Keynes (1930, p. 327-328) identifies the Industrial Revolution as a milestone in economic progress, capable of solving the "economic problem" — understood as overcoming the struggle for subsistence. Thanks to the continuous accumulation of capital and technical advancement, humanity could focus on leisure time and the search for meaning, higher values, and constructing a life less centered on material concerns.

Yet, the theoretical prospect of unparalleled improvements in living standards is juxtaposed with the tangible challenge of technological unemployment. The economy's capacity to generate new occupational roles that absorb the surplus labor rendered obsolete by technological efficiency remains inadequate. Nonetheless, Keynes posited technological unemployment as a transient phenomenon, resolvable through societal adaptation to emergent economic paradigms (Keynes, 1930, p. 325).

Contemporary innovations in automation have significantly redefined the modalities of goods and services production, effectuating profound reorganizations in corporate structures and markedly influencing patterns of job creation and attrition across diverse sectors, including industrial, service-oriented, and primary activities. These transformations are primarily propelled by advancements in Industry 4.0 technologies, encompassing enhanced connectivity, the proliferation of the "Internet of Things," robotics, big data analytics, and groundbreaking developments in artificial intelligence (AI) and machine learning (Gimenez & Santos, 2019, p. 2).

Since the 2010s, the integration of AI systems has emerged as one of the most consequential transformations in the global economy. AI, characterized by its deployment of statistical methodologies to emulate human cognition, significantly augments efficiency in occupational tasks (Kaufman, 2019). These advancements have escalated the scope of automation, warranting rigorous examination of their ramifications on labor markets.

The Industrial Revolution necessitated workers to manage and organize production while simultaneously displacing workers as machinery increasingly replaced human labor — in other words, an increase in the organic composition of

capital (Marx, 2017, XIII). While machinery initially replaced physical strength and skills, today cognitive and creative skills — those involving innovative approaches to solving complex problems and understanding and interpreting human emotions—are impacted by new auxiliary tools and methods of production using AI.

In this context, the question posed by Keynes about the possibility of human emancipation in the face of technological development arises. While the promise of increased labor productivity and the creation of new occupations related to new technologies materializes, indications suggest that the transformation of the worker into abstract labor is reinforced, generalizing social relations based on economic and quantitative criteria (Marx, 2017, I).

Social relations are apparently mediated by commodities, obscuring the real conditions of production and the subordination of all social relations to capital. This dynamic extends the logic that transforms concrete labor into an abstract force subordinated to capital (Marx, 2017, I, XI, XII). Thus, an ontological reduction occurs, a movement that dehumanizes and transforms concrete historical subjects into abstractions, reducing the qualitative dimensions of social relations to a purely economic, quantitative basis (Oliveira, 2004; Melo, 2009, p. 169).

Initial stages of AI technology integration into companies' productive activities indicate that, initially, its role is to simplify tasks without massive job destruction. For example, studies show that less experienced software developers who used AI tools completed tasks 56% faster than those who did not (Peng et al., 2023). However, in a scenario of full integration of these technologies, the complementary use of AI technologies could automate up to 30% of working hours in the United States (Jung & Desikan, 2024, p. 10).

For individuals, the impact varies according to the qualifications required by occupations and the degree of interaction with AI technologies. Both the impact and the degree of interaction are positively associated with significantly higher earnings in highly exposed roles. Among the highly exposed occupations are lawyers, sales representatives, auditors, accountants, clerks, marketing managers, designers, strategic consultants, etc. (Kochhar, 2023, p. 14-15; Mugrauer & Pers, 2019, p. 54, 56, 65).

The transformation of the productive base through technological advancement also reinforces a labor market trend of polarization between executive occupations, with high remuneration, and low-skilled occupations, with low wages. Middle-level jobs

tend to disappear, replaced by new technologies (Antunes, 2011, p. 178; Antunes & Mazon & Cardoso de Mello, 2023, p. 15).

Thus, the incorporation of AI technologies simultaneously acquires multiple meanings: destruction, creation, and displacement of roles depending on specific tasks and global and domestic economic conditions. Lane and Saint-Martin (2021, p. 28) argue that a gradual transition will occur, where AI integration complements some worker activities while replacing others. AI may pressure the supply of low-skilled workers, reducing wage levels; at the same time, in high-skilled occupations, opportunities may narrow, with a small number of high-skilled workers with wages above average levels (Lane & Saint-Martin, 2021, p. 32; Gimenez & Santos, 2019, p. 13).

This article aims to explore the consequences of integrating AI systems into productive activities in the U.S. labor market. It is worth noting that a sectoral analysis will not be conducted, instead opting for a broader perspective on the topic. Acknowledging that a sectoral analysis could reveal distinct results, this study relies on literature review and secondary research, offering an overview of the impact of these technologies on the U.S. labor market, analyzing changes in organizational structures, repercussion on productivity and performance, on wages and macroeconomic influence. The U.S. labor market is chosen for analysis due to its leadership in adopting AI technologies and the availability of data.

Structural Transformations and Labour Market Polarization:

In the 1970s, alongside the introduction of technologies from the Third Industrial Revolution — namely, the advent of New Information and Communication Technologies (ICTs) within the spheres of accumulation — capitalism underwent profound restructuring. This transformation was driven by the dismantling of the Bretton Woods agreements and the rise of a neoliberal agenda characterized by financial deregulation, corporate offshoring, and the reformulation of corporate strategies. In the United States, this period witnessed the decline of industrial centrality and the rise of the service sector, propelled by economic and social changes that curtailed state autonomy and expanded economic liberalization (Antunes, 2011, p. 67).

Economic growth led by Germany and Japan, which reconstructed their economies with more modern and flexible industrial structures capable of effectively responding to technological and organizational changes, began to challenge U.S.

hegemony, reducing dependency on the American-led model. The pressure on the dollar prompted the U.S. government to suspend gold-exchange standard. The dissolution of this mechanism, which underpinned the Bretton Woods arrangement, was soon followed by movements toward deregulation and liberalization of trade, finance, and exchange rates, aimed at capitalizing on new opportunities for accumulation in a volatile scenario. The central role of the dollar in the international system was reestablished, no longer as a stabilizing economic force but as the foundation of a rapidly expanding global credit system (Belluzzo, 2009, p. 53–55).

Global trade relations were redesigned. The United States adopted a strategy combining high trade deficits with cheap, high-quality imports, particularly from Japan and Germany. This approach allowed Americans to focus on developing strategic sectors such as cutting-edge technology, computing, biotechnology, and sophisticated services. While modernizing their industries, the U.S. abandoned traditional sectors, exposing them to global competition and ensuring support from their exporting partners[1] (Tavares, 1985, p. 161–162).

International capital flowed massively into the U.S. financial market, revitalizing the dollar as the hegemonic currency. These financial movements enabled the United States to finance its fiscal deficit without significant internal inflation. The American strategy combined heterodox and contradictory policies, integrating expansionist fiscal measures with stringent monetary policies. On one hand, the government reduced social spending and expanded fiscal deficits by lowering taxes on the wealthy and increasing military budgets. On the other, it upheld high-interest rates, attracting global capital to the U.S. financial system. This approach fostered a development model financed by short-term credit, external debt, and public spending (Tavares, 1985, p. 161–163).

This model, characterized by the integration of financial resources, allowed U.S. companies to expand their presence beyond national borders. Surplus financial capital accumulated domestically was channeled toward the creation of new enterprises and the consolidation of global monopolies. This dynamic led to the establishment of a

[1] The United States upgraded its high-tech industry through affordable, cutting-edge equipment and foreign venture capital, while making minimal changes to its existing energy, agricultural, and heavy industrial sectors. This strategy relied on support from external sources—such as Japan, Germany, and other European countries — to drive modernization without requiring extensive domestic investment or major structural transformations (Tavares, 1985, p. 161).

monopolistic system where capital concentration became fundamental to reproducing capital on a global scale (Belluzzo, 2009, p. 43–44).

Transnational corporations emerged as organizational forms of financial capital, transcending their characteristics as large and highly internationalized enterprises to become veritable financial centers with industrial activities. Their operations reflected the predominance of financial logic over productive activities. Large American corporations restructured their operations, prioritizing financial returns over direct industrial production. These corporations ceased to merely produce goods and services and instead consolidated themselves as centers of income capture through financial assets such as brands, patents, royalties, and other intangible goods aimed at maximizing returns on capital (Serfati, 2008, p. 40).

In this context, corporate governance in large companies was profoundly altered by financialization. The creation of holding structures and specialized financial entities enabled these companies to centralize the management of financial assets and reorganize their operations into global value chains. These chains were designed to optimize value capture, often outsourcing less profitable production stages while concentrating on activities offering higher financial margins, such as branding, design, and marketing. This vertical disintegration fragmented production processes and concentrated the most lucrative links of the value chain in developed countries[2] (Antunes & Mazon & Cardoso de Mello, 2023, p. 8; Serfati, 2008, p. 41–43).

The transformations driven by the financialization of American companies profoundly impacted the U.S. labor market. During the 1980s and 1990s, many companies abandoned the practice of offering long-term careers, replacing older and more expensive workers with younger, lower-cost employees. Employment characterized by long-term security, typical of the Golden Years, became more flexible and unstable (Lazonick, 2013, p. 866). Financial markets legitimized the aforementioned logic that prioritizes immediate gains, and shareholder returns over productive investment. This shift led to higher worker turnover and more precarious

[2] General Electric (GE) can be seen as a prime example of the drive for swift increases in share value. In 1981, one of the world's most prominent industrial firms began offloading parts of its operations. Over the ensuing five years, it shed 117 business units — accounting for 20% of its total assets — and downsized its workforce by more than 100,000 employees, representing a quarter of its staff. The purpose of these measures was to concentrate exclusively on lines of business in which GE held a leading global position (Antunes; Mazon; Cardoso de Mello, 2023, p. 8).

contracts, often marked by a lack of benefits and stability[3] (Lazonick, 2013, p. 903–904).

Recent occupational polarization has taken shape within this context. While highly skilled sectors, such as information technology, continued to grow, low-skill jobs also expanded, leaving the middle class with limited options[4]. Consequently, wage inequalities deepened, and economic mobility became restricted for large segments of the population (Lazonick, 2013, p. 868).

Therefore, the recent polarization of the American labor market stands out due to the growing disparity in job quality, whose primary effects include a transition to a service economy, changes in occupational structure, and new corporate strategies (Antunes, 2011, p. 70; Kalleberg, 2011, p. 62). The shift in the focal center of the U.S. economy from industry to services resulted in declining manufacturing employment and the relocation of workers to the service sector, particularly low-skill and high-turnover services characterized by precariousness and low wages (Antunes; Mazon; Cardoso de Mello, 2023, p. 14). These services became a repository for individuals who lost their industrial jobs, contributing to greater income inequality.

Education emerges as a critical differentiator in determining job quality: while high-skill, high-income occupations require higher educational levels, low-skill, low-income positions are generally accessible to individuals with lower levels of schooling (Kalleberg, 2011, p. 79). This segmentation creates a labor market hierarchy where the ability to secure a “good” job increasingly depends on education and skills, relegating less-qualified individuals to low-paying, low-mobility positions.

The U.S. labor market, hence, is marked by an intense polarization between high-skill and low-skill occupations, with a broad service structure as the economy’s

[3] “The situation of workers in this sector worsens when we take into account the low level of unionization in these branches. While the United States was once marked by the significant role of unions in the country’s social, economic, and political structures in the postwar period — with a unionization rate of 30.4% in 1960 — the situation has changed considerably in more recent decades, especially in this sector where adherence to trade unions is far less significant. Union membership has been falling sharply since the 1970s, reaching only 13.5% of workers at the end of the twentieth century. It was under 9% among healthcare workers and just 3% among those in leisure and other services. Factors that exacerbate this situation include smaller workplaces with fewer people under the same roof, high turnover, the nature of these occupations, and individual competition among the workers themselves […]” (Antunes, 2011, p. 130, our translation).

[4] Changes in corporate structures have led to a pronounced reduction in production-related personnel, as well as in jobs within bureaucratic hierarchies and support activities — such as secretaries, office clerks, typists, telephone operators, and so forth. The relative decline of these intermediate strata, typical of the “middle class,” is a widespread phenomenon observed in various countries (Kwon et al., 2021; Bisin & Martin, 2021; Mendoza & Jaramillo, 2021).

pivotal sector. For low-skill occupations, productive transformations translate into lower wages, increasingly precarious work, and less demand for qualifications. Conversely, for high-skill occupations, these transformations mean higher remuneration, heightened competition, and greater educational and technical qualification requirements to address new production conditions.

AI-Driven Transformations: broad review

The advancement of AI technologies has one of its effects in transforming the organizational structures of companies in the United States. The assistance of AI tools in data-driven decision-making processes has expanded workers' autonomy, reducing the need for a structure with multiple hierarchical levels. Thus, AI technologies have allowed organizational management to adopt more horizontal structures. This has led to the disappearance of intermediary occupations, reinforcing the qualification requirements for upper-level positions, particularly in fields such as hard sciences, technology, engineering, and mathematics (Babina et al., 2023, p. 17).

Between 2010 and 2018, with the growth of investments in AI, the number of entry-level jobs increased by 1.6%, while middle and senior management positions decreased by 0.8% (Babina et al., 2023, p. 19). This shift is more or less sensitive depending on the workers' field of education. During the same period, the relative participation of workers from the fields of hard sciences, technology, engineering, and mathematics increased by 1.9%. Simultaneously, the relative participation of workers with education in the humanities decreased by 1.1%. Specifically, in the areas of information technology and data analysis, the demand for workers has grown, indicating a close relationship between these fields and AI (Babina et al., 2023, p. 22).

Although an increase in entry-level jobs is observed (Babina et al., 2023), some projections suggest the opposite. In fact, the automation enabled by AI, especially Generative AI[5], poses a barrier to entry-level occupations. For instance, entry-level positions in Law primarily involve reviewing legal decisions, client communication, and drafting reports — tasks that can be performed by Generative AI models. Other entry-

5 Generative AI refers to systems based on Large Language Models (LLMs) — programs with large parameter sets that, in conjunction with Machine Learning, can establish relationships and identify patterns from vast amounts of data. Consequently, these technologies develop models and can create content (Google Cloud, 2024).

level roles in areas such as finance, marketing, and software[6] development face similar pressure (Kinder, 2024).

It is speculated that a scenario may arise where a large portion of entry-level positions, previously considered protected from automation, are eliminated. At the same time, the demand for skills related to managing AI as a tool for task completion would increase. These positions would therefore be restricted to a few selected interns or juniors capable of using AI tools, supervised by executives or managers responsible for conducting complex activities (Kinder, 2024).

The labor market in Wall Street aligns with this hypothesis. The adoption of increasingly efficient automated systems for routine tasks has led to projections of thousands of job cuts, particularly in roles requiring lower levels of technical qualification such as Junior Analysts, Support and back-office teams, Traders and operators handling manual activities. This trend is not confined to major banks but extends across the entire financial services ecosystem, including consultancies, hedge funds, and fintech companies, highlighting a widespread phenomenon of human labor being replaced by algorithms (Shaw, 2025).

Financial institutions view this automation as an opportunity to reduce costs and increase productivity. Algorithms' ability to perform repetitive processes more rapidly — ranging from data collection and initial analysis to compliance monitoring — has resulted in many entry-level workers losing their positions. Simultaneously, there is a growing demand for AI and machine learning specialists, Data Scientists and programmers, emphasizing that the adoption of AI is not merely a cost-reduction mechanism but also a strategy for modernization and competitiveness (Shaw, 2025).

Thus, AI use should not be understood solely through the lens of substitution but also from the perspective of complementarity. AI as a complementary tool for automating tasks can lead to an increase in the marginal productivity of labor (Acemoglu, 2024, p. 22). Teachers may use these technologies to shorten the time spent preparing lessons and other school activities; nurses may use them for administrative tasks, medical data analysis, etc. (Muro et al., 2024, p. 10). This reinforces the idea that workers with a certain level of specialization will be necessary to operate these technologies.

[6] According to a survey conducted among developers and programmers, 62% of respondents use AI tools to perform their tasks. Furthermore, 71% of the respondents believe that the primary benefits are linked to lowering the learning curve for new developers (Overflow, 2024).

Acemoglu et al. (2022, p. 22) identified a significant increase in demand for AI-related skills, particularly since 2015, in establishments where the task structure was suited to AI technologies that later emerged. During the same period, a 14% reduction in non-AI-related job openings was observed. Additionally, the data indicated that sectors with higher exposure to AI did not bring growth in non-AI-related jobs, suggesting that if there is productivity growth or new task creation with the incorporation of these technologies, the results are insufficient to compensate for task substitution (Acemoglu et al., 2022, p. 23).

Highly qualified occupations that require higher educational levels are the most impacted by AI integration. A report addressing the potential impact of Generative AI on the U.S. labor market suggests that 30% of American workers have at least half of their tasks exposed to Generative AI, while approximately 85% of these workers may face an impact on at least 10% of their tasks (Muro et al., 2024, p. 10).

Within these occupations, tasks falling within the current limits of AI demonstrate high productivity gains. Management consultants were able to complete 12.2% more tasks than workers in the same role who did not use AI. These gains also occurred in the average time spent per task, which decreased by 27.63% with exclusive use of Generative AI and 22.5% with the technology accompanied by a review (Dell'Acqua et al., 2023, p. 11).

Regarding the quality of these tasks, the group of consultants who used AI and conducted a review of the produced content scored higher in evaluations than those who only used AI to complete their tasks (Dell'Acqua et al., 2023, p. 10). However, the diversity of solutions declined. In both groups, even though productivity gains and quality improvement were achieved, the ideas produced were very similar to one another (Dell'Acqua et al., 2023, p. 12).

This finding raises questions about the ability of AI to be a truly disruptive tool for activities involving creativity to develop solutions and innovations. AI technologies are very efficient at recombining existing ideas. One of the main reasons for this is the limit of data feeding the algorithms of these technologies. Since their sequences of instructions lack real-world contact and are trained with limited inputs, there is a frontier of creative innovation for these technologies (Frey & Osborne, 2024, p. 5).

Task redefinition is, at first, the primary means by which AI is incorporated into the context of better-paid and highly qualified occupations. The creation of new tasks

in this process would be a second step that, ultimately, could lead to the creation of new occupations (Lane & Saint-Martin, 2021, p. 35-36).

Another work that contributes to assessing the impact of incorporating AI systems into firm processes, but for less qualified occupations, is that of Brynjolfsson, Li, and Raymond (2023). In a large U.S. company specializing in process management software for small and medium-sized businesses, an AI assistant was implemented for technical support occupations, using a recent version of GPT with instructions directed at customer service. To evaluate the productivity of these workers, metrics such as average service time, resolution rate, and a proprietary customer satisfaction indicator based on surveys were used (Brynjolfsson et al., 2023, p. 9-10).

The average service time decreased by 3.8 minutes; the number of services per hour increased, on average, by 14%; and the resolution rate grew by 1.3 percentage points. The workers who experienced the most significant gains were newly hired employees, with a 46% increase in the resolution rate metric per hour, as no major impacts were noted on the performance of more experienced workers. For more experienced workers, moreover, responses to customers became less elaborate, indicating that AI compromises the quality of tasks performed by these workers (Brynjolfsson et al., 2023, p. 15).

Productivity gains are associated with adherence to AI suggestions. Workers who accepted most suggestions experienced a productivity increase of about 25%, while workers who followed fewer recommendations saw a 10% increase in their productivity (Brynjolfsson et al., 2023, p. 19). Another observed impact was the reduction in escalation requests, meaning fewer customers demanded interaction with superiors to solve their problems, suggesting that AI use contributed to increasing customer confidence in the competence of support workers (Brynjolfsson et al., 2023, p. 24).

In other terms, AI contributed to workers' productivity, improved the quality of interactions with customers, and favored greater autonomy for workers in lower-ranking positions, as customers felt less need to interact with higher-ranking superiors to solve their problems.

Although there are evidence that low-skilled workers achieve productivity gains at the intra-firm level (Brynjolfsson et al., 2023), there is no evidence that this process promotes wage gains, especially for these less-skilled workers. On the contrary, AI

incorporation may increase inequality due to the effects of task redistribution or, ultimately, substitution (Acemoglu, 2024, p. 5).

The impact of AI on process innovation is not as significant. Unlike technologies such as industrial automation, which have had a direct impact on reducing operational costs and increasing productivity, investments in AI have yet to produce such clear results in these areas. This phenomenon may be related to the specific characteristics of AI technologies, which are more geared toward expanding opportunities for product development rather than operational efficiency (Babina et al., 2024, p. 15).

From a macroeconomic perspective, productivity gains attributed to the incorporation of AI are moderate and primarily favor capital, not labor. The productivity gains derived from AI increase the share of capital at the expense of labor in production, which does not necessarily translate into higher wages (Acemoglu, 2024, p. 12–13). Even in a scenario of rising labor productivity, there is a clear trend toward increasing inequality between capital and labor, with capital income growing faster than wages (Acemoglu, 2024, p. 22–23).

AI has driven product innovation that translates into business growth. Companies that invest more heavily in AI tend to register more patents and trademarks related to the creation of new products, taking advantage of AI's ability to customize and enhance their offerings. This allows them to achieve broader market reach, meet consumer needs more efficiently, and differentiate themselves from the competition (Babina et al., 2024, p. 16).

Furthermore, large companies can extract greater benefits from the technology because they have access to proprietary data and the ability to scale innovations rapidly. This dynamic reinforces monopolistic positions in certain sectors, exacerbating inequalities in the market (Babina et al., 2024, p. 18–19).

The Unequal Future of Work in AI-Driven Economy

The integration of artificial intelligence systems has led to structural transformations within certain companies, as AI reduces the need for constant supervision of tasks by hierarchical superiors. The hypothesis arises that some firms might adopt more horizontal management structures. There has been a growing appreciation for workers with STEM experience, while those in the humanities have lost relative ground in these companies' employment structures. Despite the increase

in entry-level positions, projections indicate that the use of AI technologies, such as Generative AI, could significantly reduce these positions.

In the senior management domain — where the highest salaries are found and where a high level of education and technical skills is already required — the labor market has become more competitive and demanding. Rather than directly replacing these occupations, AI has proven to be a complementary tool that requires professionals to undergo constant retraining. These workers are challenged to refine their competencies or acquire new AI-related skills in order to remain competitive.

The demand for continuous qualification deepens the income inequalities between highly qualified workers and those with lower levels of education and technical skills. Those in low-paying occupations with few prospects for advancement can face significant barriers to acquiring the training needed to integrate new AI technologies into their daily work routines.

This dynamic is reinforced as management positions — those most exposed to AI — tend to exhibit salary gains associated with the incorporation of these technologies. In other words, professionals in top management positions, in addition to already receiving higher compensation, can further increase their earnings through AI.

Although lower-skilled and lower-paid occupations may experience a boost in productivity due to the shorter learning curve facilitated by AI, there are no indications of salary increases for these positions. On the contrary, some of these roles, particularly those at entry level, are more likely to be replaced rather than complemented by AI.

Regarding the production process, adopting AI systems not only redefines job functions but also accentuates structural inequalities. The benefits of AI tend to favor highly skilled sectors at the expense of less specialized workers. Although the impacts are heterogeneous, a universal component stands out: an uneven redistribution of gains between capital and labor.

This process is most evident in low-skilled occupations, where tasks previously performed by workers are transferred to AI. This reduces the value of low-skilled labor and exerts downward pressure on wages. In highly specialized sectors, education and technical expertise become even more central in a market characterized by increasing competition. Intermediate and senior positions have lost ground in the workforce

composition of various companies, while the activities of managers and executives are concentrated in more complex tasks, often supported by AI.

Although the productivity gains resulting from AI generate economic benefits, they have been largely captured by the owners of the companies implementing these technologies, intensifying income concentration. As a result, there is a general trend toward an increased share of capital in production, whereas the efficiency gains enabled by AI do not translate into significant wage increases.

The productivity boost that could foster improved living conditions and social well-being is instead channeled toward maximizing profits for major economic groups, without bringing about structural changes that might benefit the majority. Rather than freeing workers from grueling working hours, neoliberal capitalism sustains the conditions of exploitation and inequality, perpetuating the subordination of workers to the economic system (Antunes 2011, p. 216).

This process is intensified as financial logic takes hold of the corporate landscape. Technological advancements drastically reduce the need for human labor. Highly qualified occupations are increasingly limited and concentrated in strategic positions that demand advanced specializations, mainly due to administrative automation. The labor market polarization seen in the United States can be summarized by low-wage, precarious, high-turnover jobs (Antunes & Mazon & Cardoso de Mello, 2023).

A series of social adversities arises from the introduction of artificial intelligence into the labor market. Since the market cannot absorb the surplus of workers, the labor force shifts toward various activities, stressing the predominant personal services sector. Income concentration widens social inequality and consolidates the dependence of workers' incomes on the elites, who hire services provided by these workers[7] (Antunes & Mazon & and Cardoso de Mello 2023, p. 18).

There is no evidence that this dynamic could be reversed; rather, as discussed in this article, it points to a deepening of the process. On the one hand, workers are placed in service occupations that require low formal qualifications, offer low wages,

[7] "As wealth became increasingly concentrated [among the elites], concentric income circles began to form: the most fortunate surrounded themselves with a variety of service workers, who, in turn, required lower-quality and less extensive services, and so on. In other words, the nanny of the upper-middle class also needs a nanny for her children. [...] What emerges is an expanded division of labor for personal life maintenance: the wealthiest enhance their comfort by delegating the tasks that make up their lives, hiring new service workers who, burdened with caring for others, lack the time to care for their own lives, thus generating demand for additional personal services, and so on" (Antunes, 2011, p. 98, our translation).

and exist to serve those who concentrate higher incomes. These workers are left with no choice but to become versatile, engaging in various activities to supplement their income. On the other hand, workers in better-paid positions, although constantly required to update their skills to meet fierce competitive conditions in the labour market, remain subject to a dehumanizing logic that serves the reproduction of capital. Despite their relatively more favorable material conditions, they remain alienated from the very reality they contribute to shaping.

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