

Automation, Financialization, and Institutional Change: Challenges for Progressive Policy

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Abstract: This paper argues that the issue of “technological unemployment” resulting from automation is the result of ceremonial encapsulation within the process of progressive institutional adjustment. While institutions of production have adjusted to account for new technological developments, institutions of distribution have not. As discussed here, the main cause of this lack of adjustment is a financialized economy, in which shareholder returns motivate and dominate economic decision making and activity. As a result, gains and benefits from technological advances exacerbate existing income inequality and reduces the power of labor. I discuss this issue in detail before explaining how progressive policies that divorce private wage-labor from access to the system of social provisioning may serve to smooth this process of institutional adjustment caused by the introduction of automated processes.

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In 1930, John Maynard Keynes made the following prediction: “In quite a few years – in our own lifetimes I mean – we may be able to perform all the operations of agriculture, mining, and manufacture with a quarter of the human effort to which we have been accustomed” (Keynes 1930 [2015], p. 80). Clearly, this prediction did not come true: work weeks in the United States today range from 44 to 50 hours on average, and up to 80 hours in the technology, finance, and manufacturing industries (Ward 2017). Meanwhile, fears of robots replacing workers – what Keynes referred to as technological unemployment – permeate the workforce, with those working manufacturing and production jobs at the highest risk of replacement (Brynjolfsson & McAfee 2014). Keynes, however, was unconcerned; he viewed the ability to produce enough output for people to live comfortably with less labor as a positive. Technological unemployment, in his view, “means in the long run *that mankind is solving its economic problem*” (Keynes 1930 [2015], p. 80). The main issue today, rather, stems from institutions governing distribution, where the requirement of selling one’s labor in private labor markets makes this automated solution to the economic problem untenable. The fewer people that are required for production, the fewer are options for distribution. As such, technological unemployment today represents not a benefit, but mass poverty, unemployment, and economic inequality (Brynjolfsson & McAfee 2014; West 2015; Acemoglu & Restrepo 2017; West 2018).

This paper argues that fears of technological unemployment result from a failure of institutional adjustment in the sphere of distribution as technology in production advances. Using Foster’s (1981a) principles of institutional adjustment, I argue that the main issue has been the ceremonial encapsulation of automated technologies in the context of a financialized economy, where the dominant value structure promotes maximizing returns to shareholders (Lazonick & O’Sullivan 2000; Lazonick 2014). Policies that emphasize divorcing distribution from private

wage-labor are a necessary first step in generating economic stability in a predominantly automated economy.

Automation in the Modern Economy

Recent data regarding work and wages help give a picture of the effect of automation on labor¹. Between 1993 and 2013, the median income for men without high school diplomas fell approximately 20%, while non-college educated men with high school diplomas saw a 13% decline over the same time period (Bonvillian & Sarma 2018). Meanwhile, the prime-age male labor force participation rate has fallen approximately 8% between 1948 and 2017 (West 2018). If this continues, Summers (2014) predicts that one third of men between 25 and 54 could be unemployed by 2050, while Barton, Woetzel, Seong, and Tian (2017) predict 20% of all work activities could be automated by 2030².

Despite using fewer workers, market capitalization for the largest companies has increased. In 2017, Apple had a market cap of \$800 billion with only 116,000 workers; AT&T in 1962, for comparison, had the largest market cap with \$20 billion and 564,000 workers (West 2018). Much of this change has occurred in the wake of the Great Recession. In 2014, it was found that the costs of robots had fallen to the point where such automation was a viable alternative to low-wage labor, leading to lower real wages and less employment (RBC 2014; West 2015). In their study of the effect of an increase in industrial robot usage on U.S. labor markets, Acemoglu and Restrepo found that “one more robot per thousand workers reduces the employment to population ratio by about 0.18-0.34 percentage points and wages by 0.25-0.5 percent” (2017, p. 1). Post-Great Recession

¹ It should be noted that the fear of automation harming labor is not new. David Ricardo in his *Principles of Political Economy and Taxation* (1817), for example, famously included a chapter “On Machinery” in which he discusses how the introduction of machinery could reduce the amount of surplus devoted to labor.

² Working-age non-college educated male employment rates are typically used as a proxy for automation as they tend to work in jobs that have the highest risk of automation (West 2018).

recovery has seen a similar trend, with most of the jobs generated during the recovery going to individuals with bachelor's degrees or higher (Carnevale, Jayusandera, & Gulish 2016). While workers with exceptional skills are generally able to find work, workers with "ordinary" skills are suffering (Byrnjolfsson & McAfee 2014; West 2015). As result, income inequality has increased. Between 1970 and 2018, post-tax and transfer real incomes increased approximately 40% for the bottom half of income earners, from \$20,000 to \$28,000; meanwhile, it increased 250% for the top 1% of earners, from \$330,000 to over \$1.1 million (Saez & Zucman 2019).

Automation has negatively affected those at the bottom. This is because there has been "a failure of existing institutions to channel technological change into broadly based benefits" (Greenwood 2019, p. 379). In the next section, this issue is discussed further in the context of the Foster's (1981a) theory of institutional adjustment.

Automation and Institutional Adjustment

The process of institutional adjustment examines how new technologies³ are introduced and assimilated into existing institutional settings (Bush 1987). These new technologies represent new methods of instrumental problem solving that are incompatible with existing methods. As such, technological development allows for new patterns of behavior. However, such patterns must be brought into the existing institutional fabric before they can transform it. Foster's (1981a) theory of institutional adjustment describes this process and explains more fully how technological developments can transform existing power structures⁴.

³ "Technology" is used here in the Ayresian definition as a set of tool-skill combinations. It is a "mode of doing" (Ayres 1953, p. 282) and considered a learned behavior.

⁴ It is recognized here that the term "institution" is a point of contention among institutionalists (Tauheed 2013). In line with Foster's theory the term "institution" is used here to mean correlated patterns of behavior, in which behaviors are connected through a system of values that define how these behaviors occur. See Bush (1983) for more on this approach.

The starting point for institutional adjustment is technological change (Bush 1987; Sturgeon 2009). This change creates new paths for problem solving, giving rise to the first principle of institutional adjustment – instrumental primacy⁵. This principle claims that institutional adjustment is predicated on the existence of new methods of problem solving. However, these methods do not appear randomly. The second principle – recognized interdependence – argues that these new patterns of behavior are the result of directed action. The introduction of new patterns occurs in a way that recognizes the effect they have on existing methods of problem solving. The final principle – minimal dislocation – defines the limits of adjustment, arguing that non-problematic patterns of behavior must be left unchanged (Foster 1981b).

Given these principles, Bush (1983; 1987) examines specifically how new patterns of behavior are woven into the existing institutional structure. Progressive institutional adjustment occurs when new technologies are introduced and assimilated in ways that replace ceremonially warranted patterns of behavior with instrumental ones. This occurs in two stages. First is the process of ceremonial encapsulation, whereby new discoveries “will be incorporated into behavior patterns only to the extent that the community believes the previously existing degree of ceremonial dominance can be maintained” (Bush 1987, p. 1093). Ceremonial patterns of behavior, in other words, capture the new instrumental methods of problem solving and use them to reinforce existing patterns of ceremonial dominance.

However, despite being encapsulated, the new technologies and instrumentally warranted methods of problem solving are integrated into the existing institutional structure. These new methods become widely known and may be applied in other areas beyond their initial introduction.

⁵ Foster (1981b) refers to this as the principle of technological determination. To avoid confusion with more modern usages of the phrase, this principle is renamed “instrumental primacy” (Sturgeon 2009).

Adapting to instrumentally warranted patterns of behavior in the broader institutional structure “erodes the ideological foundations of those ceremonial practices that are dominant in the affected areas of activity. Eventually, instrumental standards of judgment displace ceremonial standards of judgement” (Bush 1987, p. 1102). While new technologies are initially used in ways that reinforce ceremonial patterns of dominance, the assimilation of these new technologies transforms modes of doing and replaces them with instrumental ones. This is the second stage: progressive institutional adjustment.

Technological unemployment, then, results from ceremonial encapsulation. Automation brings new methods of solving the problem of social provisioning by using less labor and creating more output. When introduced, automated technologies are initially used to reinforce the existing profit-centered value structure of capitalist production. However, so long as these automated technologies are incorporated in production, the question of whether or not the community can reproduce itself as a going concern is answered. The issue at hand is the failure of institutions governing *distribution* to adjust to the new technology. In the next section, I examine the role financialization as a dominant coordinating value in preventing this adjustment.

Automation, Financialization, and Institutional Change

Financialization refers to profit accumulation occurring primarily through financial channels rather than traditional channels of production and sale (Krippner 2005). As such, financial interests take control as key centers of economic power and activity (Palley 2007). Much of financialization in the sphere of distribution is driven by what Lazonick and O’Sullivan (2000) refer to as the maximization of shareholder value theory of corporate governance. Under this view, the goal of the enterprise is to increase its capitalized value, thereby increasing returns to shareholders. Automation is useful due to its ability to generate these returns by reducing labor

costs and increasing productive capacity. However, running this technology to full capacity reduces prices and profits: “Under the old regime of handicraft and petty trade, dearth (high prices) meant privation and might mean famine; under the new regime low prices commonly mean privation and may on occasion mean famine” (Veblen 1904 [2013], p. 87). As such, automation in a financialized economy promotes what Veblen (1921) refers to as corporate sabotage, where new technologies are introduced to replace labor, and then not used to their potential in order to maintain high returns to shareholders. The macroeconomic consequence of this is reduced real wages as employment shifts from high-wage sectors to low-wage sectors as workers replaced in manufacturing must find jobs in the service sector – between 1910 and 2015, manufacturing as a percent of total non-farm employment fell from 32.4% to 8.7% while wholesale and retail trade rose from 13.3% to 23.0% and professional services⁶ rose from 3.0% to 28.9% (BLS 2016). Meanwhile, wages as a percent of value added for nonfinancial corporations have fallen by approximately 10% from 1960 to 2016, with shareholder returns as a percent of value-added increasing by the same amount over the same time period (BEA 2018).

Automation without proper adjustments to institutions governing distribution is likely to shift national income from workers to shareholders, exacerbate existing income inequality, and widen social divisions (West 2018). Rather than erode the ideological foundations of invidious distinction and profit accumulation, automation under financialization has been used to *reinforce* the dominant position of ceremonial interests in the context of the maximizing shareholder value theory of corporate governance. This is seen in managers requiring shorter time-horizons for investment returns (Haldane 2016), holding increasingly liquid assets on their balance sheets (Davis 2018), and repurchasing stock as opposed to engaging in real capital expansion or wage

⁶ The wholesale and retail trade category includes restaurant employment, while professional services does *not* include finance and real estate, education, domestic service, or personal services.

increases (Lazonick 2014). As such, so long as the value structures associated with financialization dominate, new technological advances will be encapsulated by these ceremonial interests and used in ways to reinforce shareholder primacy. In the next section, I examine several current policy proposals that may begin to address this issue and examine their potential to generate progressive change.

Policies for Progressive Institutional Adjustment

As labor's access to the system of social provisioning is predicated on first earning wages, the key issue with falling labor requirements is the reduction in opportunities to access the provisioning system. As such, the dangers of technological unemployment stem primarily from the tight link between wage-labor and distribution under a regime of financialization, where employment opportunities depend on the ability to generate returns to shareholders. For public policy to be successful, it must weaken or remove this link. Here, I discuss three policy proposals: job retraining programs, Universal Basic Income guarantees, and Employer of Last Resort programs.

Retraining programs treat technological unemployment as a form of structural unemployment where there is a mismatch between worker skills and employer needs. By retraining workers to have more modern skills emboldened by technological progress, employment and wages should rise. These programs recognize the role of automation in transforming institutions of production, but there are questions as to whether or not they are effective in generating increased incomes. In examining the effectiveness of the Workforce Investment Act of 1998 and the Workforce Innovation and Opportunity Act of 2014, researchers found that, while intensive services and training increased the likelihood of employment, they did not lead to increased earnings (Barnow & Smith 2015). This is similar to results found when retraining workers who

lost jobs as a result of outsourcing and globalization. Participation in Trade Adjustment Assistance programs authorized in 2002 failed to provide workers with incomes to recover what was lost from the outsourced job; despite participation in these programs, the net effect was an overall loss of income as high paying jobs were replaced with lower paying ones (D'Amico & Shochet 2012). The main issue is that these programs fail to address the link between distribution and financialized wage labor. In other words, they treat unemployment as the disease, rather than a symptom of a larger problem. As such, retrained workers must still sell their labor to gain access to provisioning and are still susceptible to the same forces that led to their initial unemployment.

Universal Basic Income (UBI) programs have also received attention as of late⁷. These programs acknowledge the way in which automated technologies have transformed the provisioning system and take this new institutional setting as the starting point for problem solving. They also recognize the key issue being grounded in distribution due to the connection between wage-labor and access to provisioning. UBI proposals attempt to directly divorce wage-labor and distribution by providing a direct cash subsidy, reducing the labor burden workers must endure to survive. The major issue with such proposals is that they do not address financialization. In true UBI proposals, everyone, regardless of income, receives a direct cash subsidy (Mitchell 2019). While this will help alleviate the burden for low income consumers and more easily allow them to afford basic necessities, it may also lead to asset price inflation as wealthier individuals purchase financial assets with their subsidy. Such inflation will only serve to exacerbate existing wealth inequalities and reinforce the increased concentration of financial asset ownership since the Great Recession (Wolff 2017). Furthermore, unless the subsidy is sufficiently large enough that workers

⁷ There are a large slate of UBI policies, ranging from the Negative Income Tax to 2020 Democratic Presidential Candidate Andrew Yang's true UBI proposal of \$1,000 per person per month (Mitchell 2019). Each of these programs effectively boils down to a direct cash subsidy from the federal government.

do not have to sell their labor to provision themselves, they will still be dependent upon shareholder decisions for survival. Using the 1834 Speenhamland Poor Laws as an example, Pitts, Lombardozi, and Warner (2017) explain that this approach may simply lead to firms reducing wages offered on the labor market, knowing that UBI subsidies will make up the difference, once again exacerbating existing income inequality. Ultimately, while UBI programs address the loss of income resulting from automation, they fail to address the overall issue of financialization and may inadvertently reinforce the dominant power of shareholders.

Employer of Last Resort (ELR) programs modeled after the Works Progress Administration address this issue. These are “permanent, federally funded and locally administered programs” (Tcherneva 2018, p. 1) that hire unemployed workers to rebuild public infrastructure, create public artwork, provide care work, potentially create new green technologies to fight climate change, and more (Spross 2017; Tcherneva 2018). Employment in these programs is not based on returns to private shareholders, but on the needs of the community as a whole. As a result, automation does not harm the standing of labor as any workers suffering from technological unemployment may be immediately hired in these programs. Access to social provisioning no longer depends on the ability for one to sell their labor in private markets, as the demand for labor in ELR programs is infinitely elastic – there is a job for anyone willing and able to work at the ELR wage (Tcherneva 2018). From the standpoint of institutional adjustment, the main issue is minimal dislocation. To be successfully implemented, a federal jobs guarantee would require a major overhaul in how social assistance is provided, how the government budget is viewed by policy makers, and a pivot away from neoliberal values when considering of the role of government in the provisioning system. Even the Green New Deal proposed in Congress, which includes a form of job guarantee, is scarce on the details of how it would be implemented (H.R.

Res. 109 2019). As stated by the principle of recognized interdependence, such issues must be specified and understood prior to implementation.

Conclusion

Falling work requirements for social provisioning in an institutional system in which wage-labor and distribution are tightly linked results in automation being devastating to labor in the modern economy. As argued here, this issue should be seen as one of institutional adjustment, in which such technologies are encapsulated by financialized interests and used to reinforce the dominant position of owners *qua* shareholders. Public policy, however, can mitigate this problem. The creation of a federal Employer of Last Resort program, if instituted correctly, could lead to progressive institutional adjustment by divorcing distribution from the ability to sell one's labor to satisfy shareholder interests. Other potential solutions not mentioned here may involve creating collective ownership rights over the new technologies. Future research should emphasize how such policies can erode the dominant position of shareholders and strengthen the position of labor, even as automation marches on. With proper, progressive institutional adjustment, our grandchildren could very well lead the life Keynes envisioned us living today.

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