

(Are) Institutions more Important than Innovation?

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Abstract: The aim of this paper is to shed more light on the effects of technological innovation on economic progress from the institutionalist perspective. Based on historical data on economic growth and technological changes in the United States, we question the assumption of mainstream economics that innovation, performed by profit-making enterprises, is a key source of productivity growth. The difference between the golden age and the period since then suggests that economic progress is primarily determined by a successfully functioning institutional structure and progressive institutional changes.

Keywords: Economic progress, Technological innovation, Progressive institutional changes, Old institutionalism

JEL: B52, O33, O43.

Introduction

During the golden age of capitalism, from the late 1940s to the mid-1970s, the US economy recorded rapid economic growth, low unemployment and income inequality even in the absence of substantial commercial innovations. In the period since then, a huge investment in innovation and new technologies have not yielded the gains to economic growth, employment and to more equal income distribution comparable to the golden age. This brief paper examines the factors that may explain this difference that go beyond neoclassical economics. We argue that the shift in R&D activities from the public to the private sector and accordingly amassing of corporate power limit the power of society to improve the welfare by using the innovation in a collaborative and cumulative way.

Literature review

The literature on economic progress is certainly one of the most prolific areas of economics. The common denominator for the different theories is that economic progress implies a quantitative increase of the economy, embodied in economic growth, and a qualitative improvement of the economy in terms of providing a decent standard of living for the majority of the population. The idea that economic progress is more than economic growth is pioneered, among others, by institutionalists Clarence Ayres, Gunnar Myrdal and John Kenneth Galbraith (Greenwood and Holt 2008).

What makes the institutionalist conception of economic progress different from the mainstream or neoclassical economics is the assumption that the effects of economic growth on income distribution are not natural and automatic outcome of market forces (e.g. Gordon 1973, Peach 1987, Brown 2005, Pianta and Tancioni 2008). Prevailing institutional arrangements and power relationship have a strong impact on rate and distribution of economic growth among social classes (e.g. Peach 1987, Courvisanos 2005). Such approach to economic progress stems from the difference between

institutionalism and neoclassical economics in constructing their models (Dugger 1979, Gräbner, 2015, 2016). Thus, institutionalists try to explain human behavior by placing it in its institutional context and test their models by comparing hypothesized institutional structures with observations (Dugger 1979).

In institutionalism, technological progress is seen as a driver of economic and social progress, while institutions are often seen as a negative force that prevent adaptation to new ways of doing things (Greenwood and Holt 2008). Considering the role of technology in economic progress, Clarence Ayres (1962) define, as a one of the basic principles of economic progress, the principle according to which technological progress spreads in inverse proportion to institutional resistance. To Adkisson and Steiner (2016), technological progress can and will drive economic progress if institutional conditions allow it.

The problem in developing institutions advantageous to technological progress can be traced to the need to reconcile two conflicting objectives associated with patent protection (Brown 2009). On the one hand, property right is essential to innovator to protect its invention from free riding (e.g. North 1984, Perry 2019), but on the other hand, patent protection is not in the line with the collaborative and cumulative nature of the innovation process (Comino, Manenti, and Thumm 2019, Marques and Monteiro-Barata 2006), especially when considering public-funded research (Josifidis and Supic 2018). Using patent law to correct one market failure creates another market failure in the terms of monopoly power over innovations (Maskus 2000, Adkisson 2004).

From a Veblenian perspective, the use of patent protection by large corporations could be considered as a predatory strategy, given that innovation has become encapsulated by powerful interests who are more interested in profits than in improving standard of living (Hayden 1980, Horner 1989). In this vein, Cecilia Rikap (2020) argue that monopolizing innovation is at the core of contemporary capitalism. Assessing the Baran and Sweezy (1966) contention that most R&D efforts in the US are wasted in that as R&D absorbs a little of the surplus generated by a capitalist system, Thomas Lambert (2020) provides empirical support that R&D used in a monopoly capital system leads to further monopolization. As a result, the “common man” may not be benefitting from economic gains associated with new products and technologies (see, for example, Callus and Quinlan 1979, Josifidis and Supic 2020).

This article contributes to the institutionalist literature on innovations and economic progress by providing empirical evidence and theoretical arguments that the difference in economic progress during the Keynesian and neoliberal era can be associated with the shift in R&D activities from the public to the private sector and accordingly concentration of innovations in the hands of corporate capital.

Conceptual framework and stylized facts

From the institutionalist perspective, economic growth is primarily a consequence of technological change - the continuous development of the technological arts and crafts in Clarence Ayres' sense (Peach 1987), while income distribution is mainly determined by discretionary institutional arrangements (Park 1996). Innovations as progressive technological changes create the possibility to make transition to from society of scarcity to society of abundance - a society in which extremes of inequality are not necessary (Peach 1987) and in which the standard of living is constantly improving. Given incredible productivity immanent to modern innovations, high and rising income inequality and their economic and social consequences are not inevitable. Consequently, income inequality and poverty occurs, not because of resource constraints or a lack of technical knowledge, but because institutional arrangements have not been adjusted to the productive potential of the modern society (Peach 1994).

Accepting this framework, it is possible to relate economic progress with progressive technological changes that are accompanied by “progressive” institutional changes. The concept of progressive institutional changes refers to the displacement of ceremonial patterns of behavior by instrumental patterns of behavior in the community's problem-solving processes (Bush 1989). If institutions are ceremonially dominant, technological innovations will be absorbed and permitted only to the extent that such changes are compatible with the powerful vested interests that depend on ceremonial patterns of behavior (Bush 1987). As a result, economic progress is encapsulated by the powerful vested interests and, therefore, do not contribute to social welfare in accordance with its potential.

To what extent these ideas are compatible with stylized facts for the U.S. economy? Given that economic progress is long-term processes, the time framework of our analysis spans the period from 1953 to 2019. The period is divided into the three eras: the Keynesian era, which ended in the early 1970's when the U.S. economy was affected by two oil shocks and inflation, the 1970's crisis, and Neo-liberal era, from 1980 to present. Each era reflects different macroeconomic environment, economic policy and institutional structure in the U.S. economy.

Table 1

Table 1 presents data on economic growth, unemployment and income distribution and indicates several important differences in Keynesian era compared with the neoliberal era. The pace of economic growth in the U.S. varies widely from very slow to very fast during the last seven decades. On average, economic growth reached its highest rate during Keynesian era, and has slowed down since then with the intent of slowing down further. The lower GDP growth rate during the crisis of the 1970s and the neoliberal era has been combined with rising unemployment, slower growth of GDP per capita and deteriorating income distribution.

Economic growth decreased more slowly than unemployment rate and income inequality increased, especially during the neoliberal era. The secular increase in unemployment rate and income inequality suggest that the relationship between economic growth on the one hand and unemployment and income distribution on the other hand is not cyclical but structural, reflecting institutional failures and bad welfare policies based on anti-regulation and pro-market beliefs in recent decades.

In the long run, economic growth is determined by industrial innovation. In the absence of effective active labour market policies, economic growth generated by innovation is likely to produce increase in unemployment through automation and skill-deficit of employees not only in short and medium but also in the long term. Compared to most of the OECD countries, the United States has a relatively more flexible labor market, the government intervention rely more on passive than on active labor market policies and active labour market policies in the United states is generally less effective (Bown and Freund 2019).

In contrast to previous decades, new industries and business models are more intensive in ideas than in employment. The Schumpeterian process of creative destruction, according to which new and better industries replace obsolete ones, is more reflected in labor productivity gains but not so much in employment and wage gains. In such circumstances, it is not surprising that technological progress and rise in productivity in the U.S. economy during the neoliberal era have been gained at economic and social costs in the terms of rising unemployment and income inequality.

Focus: innovation and institutional failure

Institutional interpretation of stylized facts on economic progress in the United States given in the previous section suggests that technological innovations enable a modern society to overcome

resource constraints and enjoy continuous welfare improvements, but this potential is limited by powerful vested interests of corporate capital. As such, innovations are necessary, but not a sufficient condition for economic progress in the sense that progressive technological changes should be accompanied by progressive institutional changes.

Relying on this assumption, we consider why innovations in the neoliberal era have been associated with higher unemployment rate and income inequality than in the Keynesian era. The fact that new technologies are more disruptive and labor-saving today than in the past is only part of the explanation. It is not to say that benefits of ongoing innovations on welfare improvements should be at the same level and pace as the effects of past innovations. But the change in the nature of innovations and employment is not enough to explain why higher R&D investment and a greater number of awarded patents in the neoliberal era did not contribute to the standard of living comparable to those of in the Keynesian era.

Table 2.

Table 2 shows that the number of issued patents was almost three times higher on average per year throughout the entire the neoliberal period than in the period between the mid-1950s and 1970s. The neoliberal period is also characterized by higher R&D expenditures – on average, the share of R&D expenditures in GDP was by 0.23 percentage points higher each year during the neoliberal era. Furthermore, higher R&D performance was not transformed at the same rate in technological progress, measured by total factor productivity. Total factor productivity grew after 1980 at only about two-thirds of the rate achieved between the mid-1950s and 1970s.

The idea developed here is that the shift in R&D activities from the public to the private sector should be consider as factors helping to explain this differences. One of the most radical changes in the U.S. R&D performance which happened during a neoliberal era is the shift of R&D activities from public to private sector. The data in table 2 show that the share of federal expenditures in total R&D expenditures declined from 62.1 percent during Keynesian to, on average, 34.6 percent in the neoliberal times. Contrary to public R&D investments, business R&D expenditure increased during the same period from 35.5 to 59.7 percent. In this way, private sector, instead of government, becomes a leading R&D investor in the United States.

The fact that the business invests more than the government in R&D is not problematic in itself. Moreover, private investments are often more efficiently than its government counterpart. However, the high R&D performance of private sector is not only based on its own investments in innovation but also on government subsidies, expansion of intellectual property rights, and acquisition of startups by tech giants. From the institutionalist perspective, the evolution of R&D performance of corporate capital under these circumstances may reflects and favors vested interests of corporate capital at the expense of the common man.

The neoclassical economics justifies R&D subsidization by market imperfections associated with R&D activities. In short, market failures create a gap between the private and social benefits derived from innovations. Given that returns to society from R&D are higher than those received by private firms, the government should support business R&D investments. The protection of intellectual property rights through patent system is seen as a necessary condition that enables an inventor to appropriate the benefits from his invention. This stimulates investments in R&D and especially commercialization of its application.

These arguments can be criticized from the point of view of the concept of powerful vested interests of corporate capital chosen in this paper. An asymmetry in power in favor of the corporate capital

raises doubts over the capacity of government to offer an effective counterweight to the monopolization of innovation by corporate capital and to improve the diffusion of the results of federally-funded R&D.

The innovation process is characterized by heterogeneity of interests and preferences between innovators, corporate capital and government. Compared to innovators and government, corporate capital is more profit-driven and socially less responsive in R&D investments. As such, corporate capital seeks to establish monopoly control over the inventions, knowledge and creative expressions of innovators as their employees. In practice, this is done by obtaining a legal protection on innovation in the form of patents and copyrights or by keeping innovations secret.

A massive accumulation of economic power allows corporate capital to gain proprietary control and commodify any innovation that might be profitable, even in early stage of inventions, which, in turn, leads to the increase in the number of issued patents. The two pieces of legislation passed in 1980: the Bayh–Dole Act, and the Stevenson-Wydler Technology Innovation Act dramatically altered the patent protections in favor of private sector in the case of inventions resulted from government-funded research (for more, see Morris 2016, Paradise 2020). The proprietary control over innovation is not limited by corporate capital, but for many individual innovators and small and medium firms of limited means, patent protection on innovation is expensive and time-consuming (Von Hippel and Von Krogh 2006).

Although more small than large enterprises in the United States are considered as innovation leaders – i.e. small enterprises generate more sales from new products than large enterprises¹, the U.S R&D performance is dominated by corporate capital. Thus, all companies from the United States that have appeared on the list of the 50 most innovative companies in the world every year during the last 15 years (according to Boston Consulting Group 2020) are, at the same time, on the list of the biggest companies according to their market capitalization. This suggests not only that corporate capital has more access to R&D resources than small business, but also indicates a high concentration of R&D performance in a few industries and small number of large companies. Under the described institutional environment, the social cost of patenting and subsidizing R&D activities is the skew of distribution of technological benefits toward a corporate capital.

Conclusion

This article has contributed to the debate about the impact of innovation on economic progress in the United States taking a perspective offered by old institutionalism. The dominant mainstream view that new technologies are more disruptive and labor-saving is seen only as part of explanation why higher R&D investment and a greater number of awarded patents in the neoliberal era did not contribute to economic progress comparable to those of in the Keynesian era.

To explain this difference, we develop the idea that increasing government R&D subsidies, expansion of intellectual property rights, and acquisition of startups by tech giants during neoliberal era contribute to the monopolization of innovations by corporate capital. The evolution of R&D performance under these circumstances reflects powerful vested interests of corporate capital at the expense of the common man, taking into account the collaborative and cumulative nature of the innovation process and incredible productivity of technological progress.

¹ For example, the percent of new product sales above industry median was higher for small (52%) than for large enterprises (48%) in 2019 (Boston Consulting Group, 2020: <https://www.bcg.com/>)

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Table 1. Economic growth, unemployment and income distribution, average annual change in percent, 1953–2019.

	Real GDP growth	Unemployment Rate	Real GDP per capita	The Bottom 50%	The Middle 40%	The Top 10%	The Top 1%
Keynesian Era	3.9	4.9	2.4	0.7	-0.15	-0.31	-1.31
1970's Crisis	2.5	6.6	1.9	-0.16	-0.01	0.02	-0.08
Neo-liberal Era	2.7	6.2	1.8	-0.99	-0.24	0.72	1.48

Source: U.S. Bureau of Economic Analysis, retrieved from FRED, Federal Reserve Bank of St. Louis: <https://fred.stlouisfed.org/> The World Inequality Database: <https://wid.world/wid-world/>

Table 2. U.S. innovation performance, selected indicators, 1953–2019.

	TFP growth	R&D/GDP (%) Federal government	R&D/GDP (%) Business	R&D/GDP (%) Other	Federal government (%) (% of total R&D)	Business (%) (% of total R&D)	Other (%) (% of total R&D)	Total Applications	Total patents Issued
Keynesian Era	1.1	1.46	0.81	0.06	62.1	35.5	2.4	83182 2.05*	50751 4.71*
1970's Crisis	-0.1	1.15	0.96	0.08	52.3	44.1	3.6	102168 0.54*	68261 0.08*
Neo-liberal Era	0.8	0.88	1.53	0.15	34.6	59.7	5.7	236979 4.25*	137066 5.27*

Source: Bureau of Economic Analysis:R&D Satellite Account; National Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources: <https://nsf.gov/statistics/>

*Average annual growth rate