Center on Capitalism and Society
Columbia University
Working Paper #108

The Role of Innovation and the Digital Economy: New Opportunities and Challenges for Chinese, US and European Economic Policy

Edmund Phelps
April 4, 2018

The Role of Innovation and the Digital Economy: New Opportunities and Challenges for Chinese, US and European Economic Policy

Edmund Phelps*

I

The "role of innovation" is important to discuss not only as it relates to a healthy economy but also as it relates to a healthy society. Before continuing, a few definitions are in order:

▪ In any society, I dare say, most people are born with a desire to *create*: to imagine or conceive new things – consider the Neanderthal who evidently took pleasure in drawing figures on the wall of the cave or the prehistoric Homo sapiens who managed to create a workable flute (found in a south German cave). This is artistry and invention. It is typically personal.

▪ A somewhat smaller proportion of society, it appears, desires also to conceive new things that will be realized, or built, for *use by* others. A composer creates a new musical score, a director realizes it with a stage production and an impresario brings it to the public. If successful – and only then – it is an *innovation*. It is typically social.

What is the "role" of innovation? America's great era of innovation – from the 1820s to the 1960s – was pervasive, extending to virtually all

* Edmund Phelps, the 2006 Nobel Laureate in Economics and a 2014 recipient of the China Friendship Award, is Director of the Center on Capitalism and Society at Columbia University and Honorary Dean of the New Huadu Business School at Minjiang University.

industries and enlisting ordinary people from the grassroots on up. Abraham Lincoln exclaimed in 1858 that “young America has a great passion – a perfect rage – for the new.” As argued in my book *Mass Flourishing*, this innovating was an engaging and sometimes exhilarating experience. People were involved in their work and had a sense of taking action and of achieving things. Now, statistical analyses show that a *low* rate of innovation in a country is a reliable predictor of *low* life satisfaction.

II

From this perspective, let us examine the significant shifts over the past year or two in the economic organization and political landscape of China, the U.S. and France.

In the U.S. since around 1970, a protracted slowdown of *productivity growth* – more accurately, growth of total factor productivity – led soon to near-stagnation of total labor compensation and national income too, amidst considerable structural change. Life satisfaction, according to household surveys, appears to have been less satisfying to more and more participants.

This development ultimately brought a shift in the political landscape. Many of the workers, grown dissatisfied, expressed their frustration by voting against the political parties that had presided over the slowdown. Also, the Democratic Party had been catering especially to several special interest groups – so-called “identity politics” – and at some point the votes the Party gained from special interests came to be offset by the loss of votes from people resentful at not having been included like others.

The politics of President Trump is *opposed* to that of traditional Democrats and Republicans. Trump seeks an economy that produces a huge Gross Domestic Product per working age person – with little or no regard to wage rates or other matters of *distribution* – though he expresses an affinity with the white working class, who constitute his political "base."

At bottom, Trump, like 1920s Mussolini, is practicing the ideology that is called *corporatism*. It is a doctrine that has generally proved to be fruitless for economic growth and personal satisfaction.

The corporatist disregard for the inspirations, explorations and discoveries sought and achieved by persons of all walks of life is exacting a further toll on the *vitalism* prevalent in the people. The view that the role of the company and that of the labor union is to serve the nation, not itself, may further drain the nation of much of its *individualism*.

In France, President Emmanuel Macron has also moved away from preoccupation with distribution. He wants France to regain its rapid growth and prestige. To that end, he has sought to create more competition in French industry by cutting back the "social protection" of employees, which has been regarded as having stifled the entry of new firms into industry.

Of course, the two leaders differ. Macron hates corporatism! The tools of Macron are institutional reforms while those of Trump are fiscal and budgetary reforms. Further, Macron is an intellectual and a skilled politician while Trump is not.

In China, the government under President Xi Jinping has brought forth several initiatives. The construction of the Belt and Road signals that

China will remain fundamentally a trading nation. The reaffirmation of support for the state-owned enterprises (SOEs) signals that China will remain semi-socialist. Finally, the government implies that the purpose of investment is to increase consumption. But these initiatives and declarations are far from the whole picture.

The state has taken initiatives aimed at boosting *entrepreneurship* and, of critical importance in the long run, *innovation*: shortening dramatically the procedure for forming a new company, building a vast number of additional schools in which Chinese children learn more about the world they will face, and facilitating entry of foreigners lending their expertise.

The government has reiterated its dedication to protecting new patents. Also very important, the authorities have recognized the importance of allowing *competition* in the economy. Existing companies are freed up to enter new industries, thus forcing inefficient companies to contract or leave the industry. Competition is an invaluable solvent and the government shows its wisdom in opening up the economy to competition.

There is measurable evidence that China is going down the road of entrepreneurship and innovation. As is becoming well-known, the number of new firms registering every week is huge. At this rate, there will be a plethora of new firms dotting the Chinese landscape. The unanswered question is what proportion of the new firms will be genuinely new enterprises – not just small shops – and, of those, what proportion will have new ideas and the zeal to develop them and try them in the market.

III

How will further development in the ‘digital economy’ impact the nations of the West and beyond?

In the West, many technologists worry that the spread of AI in their economies will cause massive layoffs and a long spell of unemployment until wages have finally sunk to a lower growth path. They are worried not only about the development of AI in their own countries but also about the importation of AI-enabled robots developed overseas. The technologists are not well-trained economists, so it is high time we try to take into account the part that some market mechanisms will play in determining the effects on the path of wage rates and employment.

Of course, the adoption of robots, whether or not AI-enabled, makes it possible to produce an unchanged level of output with less labor. And, yes, when AI-enabled robots serving to *replace* labor are introduced in some industries, the *immediate* impact is layoffs and reduced wages in those industries. But, as I see it, that is just the beginning of the story. What happens after that? (In what I am going to say, I will suppose for simplicity that there is just one kind of labor and workers are all alike.)

There is a subsequent effect transmitted to other industries. In an idealized model, the displaced workers would seek employment elsewhere, thus driving down wage rates equally in the whole economy. And this general fall of wages sets in motion an *adjustment mechanism*. When wage rates go down, the rate of return to investment will go up and investment will pick up in response. The resulting increase of the capital stock will exert an upward pull on wage rates and employment in the other industries.

Another adjustment mechanism: Even if, for one reason or another, displaced workers do not move to other industries, the wage cuts in the industries adopting the cost-saving robots will ultimately induce producers there to reduce their prices; if they don't, new firms will enter those industries, thus driving down prices there. And this *fall* in relative prices means a *rise* of relative prices in other industries. These higher prices will be a force pulling up output and employment in those industries – even if wage rates had not fallen.

Another point: Even if these mechanisms ultimately perform as expected, it will be highly desirable to have *more innovation of the old-fashion kind* – innovations of a kind that empower workers to be more productive, especially in consumer industries. I see several reasons why labor force participation remains depressed in the coal mining regions of America, Britain and France. The first is that the workers are not mobile, having invested their savings in their houses and being dependent on their local government for health care, which cannot quickly be transferred to another provinces or state.

I will close on another note: Particularly in the nations of the West, there is too much focus on *stability* and the *short run*. I believe they can look forward to decades of exponential growth if they will come to accept disruptive innovations and to give their moral support to careers of innovation (as well as exploration). They have to understand that venturing into the unknown and the occasional experience of success is what the good life is all about.