FONDATION ROBERT SCHUMAN

EXCLUSIVE INTERVIEW WITH PHILIPPE AGHION AND CÉLINE ANTONIN

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"The recovery plan must be used to make intelligent investments."

Your most recent book finds that creative destruction has lifted our societies to unimaginable levels of prosperity. How does it work?

Philippe Aghion: The paradigm of creative destruction is used to explain a number of economic puzzles, starting with industrial take-off. Growth is a contemporary phenomenon dating back to the 19th century. The question is why did it happen in Europe and why so recently? Why not in China where there were major innovations such as the invention of the wheel or the compass? Despite the fact that many inventions came from China or elsewhere, economic take-off did not occur there.

Three prerequisites for growth to take-off were to be found in Europe, and nowhere else, in 1820. First, institutions that fostered cumulative innovation: universities, the Republic of Science, that network of correspondences, academies and scientific books in the 18th century. The first edition of the *Encyclopædia Britannica* was published at the end of the same century, and Diderot gave us the French Encyclopaedia. Secondly, there were institutions that guaranteed the protection of property rights over innovation: such institutions emerged in England as a result of the «Glorious Revolution», and in France as a result of the French Revolution, both of which limited the powers of the aristocracy. Finally, in Europe the conditions were there to sustain creative destruction, as economic historian Joel Mokyr explains. In China, whenever there was an innovator, he was muzzled by the emperor who feared for his power. Whereas in Europe, what allowed creative destruction to develop was competition between European countries. A researcher persecuted in France could migrate to Switzerland, Prussia or England.

Céline Antonin: We have relied heavily, among other things, on the ideas of the Republic of Knowledge, the Europe of Knowledge, developed by Joel Mokyr in his book *The gifts of Athena*. The latter effectively shows how the European fragmentation of competing states and the use of Latin as a universal language enabled the development of trade and thus industrial take-off.

You say it again in your book: to unleash the full potential of creative destruction, you need the right institutional context. Barry Eichengreen argued in his book that the institutions of the European economy were designed and set up to suit economic growth based primarily on capital accumulation and technological catch-up, but that they were not appropriate for the transition to growth based on technological innovation. Does Europe still depend on this institutional legacy?

C.A: What we want to show is that there are two paradigms.

In the seventh chapter, discussion focuses on how a country moves from a catch-up economy, which is mainly about imitating a model based on frontier technology, to an innovation economy. There is this crucial tipping point where there is a transition from a catch-up economy to one based on innovation, from extensive to intensive growth, to avoid the middle-income trap - which countries like Argentina, for example, have not managed to do. This tipping point is important in the sense that the same drivers that are not at work. In an innovation economy, higher education and competition in the market for goods and services must be encouraged.

Concerning the current institutional framework, let's say that if Europe at the end of the Second World War tried to reduce the gap with the United States, as the growth of the *Thirty Glorious Years* illustrates, focus must now be placed on a Europe of knowledge, innovation and research. There is still a significant gap between investment in research and development between Europe and the United States, which averages 2% of GDP in Europe compared to 3% in the United States. While the number of researchers per capita is roughly the same, the US clearly stands out with initiatives and institutions such as the Defense Advanced Research Projects Agency (DARPA) or the Biomedical Advanced Research and Development Authority (BARDA). These are projects that are being called for in Europe. Massive investment in research and development is needed in Europe.

But the idea of the book is also to propose a third way: to succeed in ensuring the coexistence of both the good aspects of the American model, i.e. the side that is very favourable to investment in research and development, and the good aspects of the European model, i.e. the existence of safety nets, regulated capitalism that also takes care of people and does not leave anyone by the wayside. It's about taking the best of both models.

Ph. A: Europe did have strong growth after the Second World War because the continent had to be rebuilt. The Marshall Plan helped a lot. But from a certain point onwards, it was necessary to switch to growth that was more focused on frontier innovation. This implied more competition and flexibility and, to achieve this, structural reforms had to be undertaken which a number of countries, including France, were reluctant to carry out.

Moreover, there is a whole ecosystem favourable to innovation in the United States that we do not have in Europe. Fundamental research is very well funded, both by public bodies (National Science Foundation, National Institutes of Health) and by sponsoring institutions such as the Howard Hughes Medical Institute. Then there is a developed system of venture capitalists and institutional investors. Finally, there are organisations such as DARPA that enable the deployment of an industrial policy compatible with competition. There is nothing like this in Europe. As we have seen during the health crisis, the United States was able to mobilise the necessary funding to produce a new vaccine based on messenger RNA technology on a large scale in less than a year. In France, research has not yet produced a vaccine.

Can European competition policy go hand in hand with innovation?

Ph. A.: Competition stimulates innovation in firms at the technological frontier, they innovate to escape their competitors; but competition has a discouraging effect on firms that are far from that frontier. However, over the last few decades we have seen that growth in the US has faltered despite the artificial intelligence and information and communication technology revolutions. This is the conundrum of secular stagnation. The most plausible explanation is that the information and communication technology revolution led to the rise of large companies such as GAFAM. At first this boosted growth, but then, as these companies have grown to hegemony through unrestricted mergers and acquisitions, they now inhibit innovation in other companies. Hence the decline in growth. The problem with competition policy is that it has failed to adapt to the digital age. So, the competition policy has to be adapted to the digital age so as to restart growth and productivity, to restore the full growth potential of these technological revolutions.

C. A.: There is also a need to move from a static competition policy, i.e. a policy based on the study of prices and market shares, to a much more dynamic competition policy, which implies taking into account and guaranteeing the free entry and exit of companies on the market in the future.

The idea of contestable markets, developed by William Baumol, John Panzar and Robert Willig, has to be revived. A contestable market is one in which any price increase by the company holding the monopoly leads to a competitor entering the market. One of the conditions for contestability is that the firm that has entered can exit easily, without incurring *sunk costs.* It must be ensured that any economic actor can enter and exit the market freely without encountering barriers. The question of whether a merger will inhibit future market entry is wrongly overlooked. The focus is on market share, which is not sufficient. To take an example, when Alstom and Siemens wanted to merge, the European Commission refused on the grounds that their market share would be too high. Yet this is a contestable market. Answering the question of whether there is potential entry and exit in a given market is therefore much more important than simply looking at market shares.

The notion of natural monopoly should also be stressed. A company may well hold a monopoly while the market remains contestable. The notion of dynamic entry and exit should take precedence over the idea of market shares and indices that measure market concentration.

As new variants of the coronavirus circulate in developing countries with low levels of vaccination, the issue of patents on medicines to promote access to care is on the agenda. What is your position?

Ph. A: It's true that the main problem at the moment is that there are major differences in terms of vaccination rates between countries. This is the reason why variants are spreading.

A patent system is needed that allows innovation to be produced and disseminated simultaneously. One is somewhat contradictory to the other, because diffusing innovation takes away property rights from those who innovate. However, as we have pointed out, the development of growth has taken place thanks to the establishment of institutions that protect innovation. Hence the idea, put forward by Nobel Prize winner Michael Kremer, that the state or a community of states, the G20 for example, could buy innovations and thus compensate the innovators and then disseminate these innovations to less developed countries.

C A.: Indeed, in the case of global public goods such as vaccines, the dissemination of which is extremely important, the role of the State is fundamental. However, incentives for innovation must always be maintained.

Can this institutional context, created and guaranteed by the State that you describe, which is necessary for innovation, meet the challenge of environmental transition?

Ph. A.: Some people think that *negative growth* is the best way to fight global warming. It is true that global temperatures began to rise at the time of industrial take-off in 1820. The increase in global temperature coincides with the latter. But does this mean that we should go back to the world before 1820? We have recently experienced *negative growth*. During the first lockdown in France between March and May-June 2020, GDP fell by 35% and CO2 emissions by 8%. To reduce CO2 emissions through *negative growth*, France would have to be maintained indefinitely as in the first lockdown, which caused considerable damage, not only economically but also psychologically, in both developed and developing countries. *Negative growth* cannot therefore be THE solution.

The only alternative is green innovation. Newer, cleaner sources of energy have to be found, ways to save it, to innovate in our habits. The problem is that companies that have innovated in polluting technologies in the past tend to continue to innovate in polluting technologies in the future, this is called *path dependency*.

The state has a role to play in combating this phenomenon by directing business investment towards green technologies through the carbon tax, green innovation subsidies and green industrial policy. The role of civil society is also crucial. Increasingly informed consumers are pushing companies to become more virtuous by playing on competition. Finally, one needs a good strategy for energy transition. If France contributes only 0.8% of global CO2 emissions, even though it is the sixth largest economy in the world, this is largely due to nuclear power. Hence it would be irresponsible to abruptly stop using nuclear energy. At the same time, research into other energy sources must be stepped up: nuclear fusion, photovoltaics, wind power, hydrogen, etc.

What economic weaknesses do you think the health crisis has highlighted at European level?

C. A.: Firstly, the Covid-19 crisis highlighted weaknesses in terms of investment in research and development. In Europe, we have focused on the budgetary aspect, on the Stability and Growth Pact, on reducing deficits, losing sight of the Europe of investment, such as public investment, and of knowledge. But Europe cannot be one of budgetary rigour alone. This rigour must exist, but public investment must be taken out of this budgetary framework to allow countries to invest.

Germany and Italy are considerably under-investing in infrastructure. This is one of the major shortcomings highlighted by the pandemic.

Ph. A.: Moreover, this crisis has highlighted the inadequacy of the European innovation ecosystem at all levels: basic research, venture capital and institutional investors. The priority is to make the European economies more innovative. Also, up to now, competition policy in Europe has been conceived mainly as an integration device; it must now be amended so as to better favour innovation.

In addition, the practice of public spending must be rethought. The Maastricht criteria wrongly ignore the composition of public spending. However, investment is needed to increase potential growth, bearing in mind that increasing growth increases our ability to repay our public debt. Investments in education, innovation, industrial policy, can help foster growth. In my view, the Maastricht criteria should be used more intelligently to allow governments to invest in growth while reducing other types of public spending. In addition, it is important for governments to be accountable for the governance of growth investments and to subject themselves to performance criteria.

Finally, Europe must stop being inward looking, otherwise it will be overtaken by China and the United States, which continue to innovate.

As we explain in chapter thirteen of the book, there are two ways of responding to a decline in our world market share. One is to engage in protectionism through the use of tariff tools. The other is to use innovation to regain market share. The problem with the tariff tool is that it can provoke retaliatory measures, which make it more difficult for our companies to export, which ultimately harms their innovation. However, the recovery of value chains and market shares depends first and foremost on innovation.

C. A.: The Covid-19 crisis has highlighted the issue of offshoring and the risk associated with fragmented value chains. For example, within the World Trade Organisation (WTO), China continues to take advantage of its self-declared status as a developing country to benefit from a number of advantages and a form of protectionism. Here too, action must be taken to ensure that competition is not unfair. Europe has opened up a lot but it has not always had reciprocal requirements. We must develop a European industrial strategy and coordinated policies.

How do you view the EU's recovery strategy?

Ph. A.: The recovery plan is a good response on the part of Europe, but we need to move towards a more intelligent reform of Maastricht. For example, the Italian Prime Minister, Mario Draghi, has used European funds to borrow more money, despite the fact that Italy's public debt represents 156% of GDP, to invest in growth investments: education, research, digital. At the same time, he has deepened the reform of the state. This is a good use of funds. The recovery plan must be used to make intelligent investments.

The European recovery plan has also shown that Germany's position is changing. It is more open to the still hypothetical idea of a mutualisation of debts. These developments must be used to adopt a different policy towards public spending. To make investments, other expenditure must first be reduced. For example, in France, investments have to be made in the reindustrialisation of certain sectors and in innovation, but at the same time, structural reforms, such as pension reform and others are necessary.

To be credible on the budgetary level, state reform must be deepened, i.e. tackling the duplication of territorial reform and the reform the industrial investment policy. There must be an industrial policy in which companies are accountable. There must be transformational investment. To change university policy, we need to change university governance. To reform schools, autonomy must be given to school leaders. To invest in industrial policy, it is important to make it less Colbertist. Accountability for performance must be accepted. This is the great revolution to be carried out.

The recovery plan is therefore a good thing because it has helped to save European economies, but it must now be used to make transformational investments, to understand the importance of analysing the composition of public spending, to look into the governance of policies and accept the introduction of performance criteria.

C. A.: When analysing the European recovery plans, it is clear that they remain national and that the amounts are, on the whole, limited compared to the American recovery plan and the massive infrastructure investment requirements in certain countries: Germany, Italy, etc. It is true that financing is being partially pooled at European level. Moreover, many recovery plans have the same objectives, notably in terms of energy transition or the modernisation of infrastructures. However, each country still has its own national policy and strategy. Europe should move towards more coordination and define major priorities, and not only embody a Europe of budgetary discipline. There should be an ambitious common policy, for example in the health sector or in the field of energy. At present, there is no European «energy mix», and national energy mixes are far from achieving convergence. It is towards these common and ambitious industrial policies that the European Union should concentrate its efforts. The words of Robert Schuman, who emphasised the importance of «concrete achievements» to advance the European project, are more relevant than ever.

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