

A Market for Ideas?

A Review of Joel Mokyr's A culture of growth. The Origins of the Modern Economy (Princeton 2016). 400 p. ISBN 978069168883.

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For most of history, poverty and stagnation were normal, growth and dynamism quite abnormal. Why this has changed, at least for parts of the world – up until now primarily in the West – is one of the core questions of economic history. In this book Joel Mokyr, a prolific and award-winning professor of economic history at Northwestern University, sets out to explain the origins of the modern economy in which growth has become ‘normal’ from a cultural perspective. He concentrates on the period from roughly 1500 to the first half of the eighteenth century – although his periodization is actually somewhat un-sharp – and on developments in Europe, the continent where modern economic growth first emerged. His main focus is on the role of the Enlightenment in the accumulation and diffusion of useful knowledge. Modern growth is normally defined as an increase of real income per capita that is substantial and sustained. Most scholars agree it was unknown before the onset of industrialization. Its effects were enormous, even more so considering the fact that modern growth did not just mean permanently *more* but also permanently *new* and often *better* products and services. It led to a global Great Divergence between wealthy and poor countries, because for many decades on a row it continued to be concentrated in specific parts of the world.

Growth of this magnitude and permanence, accompanied by permanent change, cannot be simply reduced to an increase in accumulation and investment, to more labour input or to changes in demand. References to geography may be helpful in explaining static differences between regions but geography can not account for the emergence and permanence of long-term disparities in growth between them. What in the end sustains modern economic growth is permanent innovation. Any explanation of it that does not extensively deal with innovation therefore misses the point. Most

economists and social scientists currently claim that innovation and thus modern economic growth ultimately depends on the presence of the right kind of institutions. They tend to focus on property rights, law and order, specific ‘inclusive’ institutions and ‘good governance.’¹ Mokyr certainly does not deny the fundamental importance for growth of these institutional arrangements.² But in his view they as such cannot sufficiently explain permanent technological change. That requires attention to the institutions that govern the accumulation and diffusion of ‘useful knowledge’ and to the nature of that knowledge itself.

The institutionalist approach just referred to focuses on general institutional (dis) incentives for economic actors to innovate. More concrete reference to more specific (dis) incentives can be found in the work of scholars who explain innovation by reference to factor endowment and factor costs. A prominent exponent of this approach is Oxford economic historian Robert Allen, who in his analysis of the first appearance of modern economic growth during Britain’s Industrial revolution claims: ‘... the steam engine, the water frame, the spinning jenny, and the coke blast furnace ... were adopted in Britain because labour was expensive and coal was cheap.’³ The knowledge used in those innovations was not ‘manna from heaven’. The fact that it was developed and actually applied would be due to economic incentives. Regions that innovated their production less or later, did so because considering their factor costs it made less sense. Mokyr rejects this kind of reasoning. Innovation in industrializing Britain, where it all began – but also in other parts of Europe – occurred across a broad spectrum of activities, with often differing factor endowments, for often differing reasons and with often differing effects. The link between ‘challenge’ and ‘response’ often is even less clear in science. In brief: ideas matter and they to some extent have a life of their own.

Mokyr has published several texts with a strong quantitative and econometric bent. But he has increasingly switched to a more ‘idealist’, cultural approach, looking for cultural roots of economic developments. Few historians and economists have tackled that connection so systematically. In this book, he extensively discusses the complex relationship between cul-

1 I only refer to Douglass North, John Wallis, Barry Weingast, *Violence and social orders. A conceptual framework for interpreting recorded human history* (Cambridge 2009) and Daron Acemoglu and James Robinson, *Why nations fail. The origins of power, prosperity and poverty* (London 2012).

2 Mokyr, *The enlightened economy. An economic history of Britain 1700-1850* (New Haven and London 2009) 63 and 65.

3 Robert Allen, *The British Industrial Revolution in global perspective* (Cambridge 2009) 2.

ture and institutions to come to the conclusion that the relevant institutions in economic history cannot be understood without an understanding of culture. He defines culture as ‘a set of beliefs, values, and preferences, capable of affecting behavior, that are socially (not genetically) transmitted and that are shared by some subset of society.’ (p. 8) Culture of course can be economically relevant in many different ways. Mokyr’s concentrates on its importance for innovation, i.e. its importance for what we usually call ‘science’ and ‘technology’ but what he, in order to avoid anachronism, prefers to describe as ‘propositional knowledge’, which focuses on how nature works and ‘prescriptive knowledge’, which focuses on how to use techniques. The subset of society he refers to in his case is the relatively small group of those who (can) make the differences when it comes to science and technology. Of the population of Britain in the eighteenth century, for example, probably no more than some ten to fifteen per cent was influenced by the Enlightenment ideas that are so central in his work. Mokyr exclusively focuses on what people thought about their physical environment. He ignores the first emerging sprouts of the social sciences, practitioners of which would increasingly claim to provide a scientific foundation of ‘social engineering’. Is this because he thinks they are not sciences, in any case do not contribute to growth, or whether he thinks studying their origins and impact would simply require another book?

Science has become so important in the modern world that we tend to forget how strange it is and how astonishing that it has become so widely accepted. Mokyr might have emphasized its abnormality and novelty even more. When Einstein claimed, ‘The whole of science is nothing more than a refinement of everyday thinking’, he was wrong. Modern science did not arise out of common sense. It is ‘unnatural’.⁴ People are not by nature systematically skeptical or prone to experiments; they do not naturally express themselves in quantitative terms or assume the existence of laws of nature that can be expressed mathematically. Nor will they spontaneously assume that the world consists of extension and movement and functions like a machine ruled by causality. Common sense, tradition and authority are far more normal as source and legitimation of knowledge than science. Traditional societies lacked systematic skepticism but were characterized by a close alliance between power, knowledge and ideology. That normal,

4 This thesis is central to Dengjian Jin, *The great knowledge transcendence. The rise of western science and technology reframed* (New York 2016). For an exhaustive analysis see chapter I. See also Floris Cohen, *How modern science came into the world. Four civilizations, one 17th century breakthrough* (Amsterdam 2010).

‘traditional’ thinking about nature has been superseded in the West by science is a ‘miracle’.

Part of the explanation may be further in the past than the early modern era that Mokyr discusses. Western tradition with its Christian, Jewish and Greco-Roman elements was inherently fractured and unstable to begin with. The synthesis of the High Middle Ages of Christian beliefs and Aristotelian philosophy was an uneasy combination of authority, dogma and reason. Europeans living in the early modern era then were confronted with many different ideas that tested their old convictions and the existing conceptual system. Mokyr discusses several of them. Just think of the phenomena we associate with the Renaissance and the Reformation, the effects of the geographical discoveries and explorations and the new discoveries of science itself, including the new observations thanks to instruments like the microscope or the telescope. All this led to doubts and controversies. Those in turn often led to fundamental skepticism but that obviously in the longer run is not a very satisfactory and practical world-view. Personally I would have emphasized more than Mokyr does to what extent the depth and seriousness of the ‘crisis of the European mind’⁵ and the many violent conflicts that raged at the time can explain the sustained pursuit by the pioneers of early modern science and ‘Enlightenment’ of new and solid foundations for knowledge and their effort to find peaceful, ‘reasonable’ ways of settling disagreement.

Mokyr repeatedly stresses the fact there is nothing inevitable in the emergence and consolidation of modern scientific thinking. The traditionalists certainly were not doomed to lose their battle. The new enlightened way of thinking that emerged never had a monopoly and continued to be a minority view, be it of a culturally very influential elite. It considered progress possible and desirable. Tradition, the knowledge of ‘the Ancients’, could be improved upon. The ‘new’ knowledge could and should be used to ‘enlighten’ people and to change and improve the world. Considering the fact that much of their ‘new science’ was not only counter-intuitive but also for quite some time didn’t produce many impressive practical results, ‘cultural entrepreneurs’ like Bacon or Newton, as Mokyr calls them, were surprisingly successful in promoting their new views. Many years passed between the Scientific and Industrial Revolutions.

In Mokyr’s catchy phrase ‘a market for ideas’ developed, with more and

5 See e.g. Paul Hazard, *La crise de la conscience européenne: 1680-1715* (Paris 1935) and Stephen Toulmin *Cosmopolis: The hidden agenda of modernity* (Chicago 1990).

better rewards for intellectual innovation and less suppression.⁶ Protective institutions were set up in which ideas could emerge, be discussed and spread. A ‘republic of letters’ developed: a virtual, non-hierarchic and transnational community of scholars in which intellectual authorship of knowledge was very important as basis for reputation, but in which that knowledge was shared with other people who might contest, test and use it. It had an organizational infrastructure of learned societies, academies and universities and profited enormously from the invention of the printing press and the emergence of a network of book-publishers and -sellers and postal services. Europe’s market for ideas was pluralistic and politically fractured but at the same time intellectually integrated. Chances to suppress ideas were therefore minor, whereas scholars could offer their ideas to the highest bidder, not only to state rulers but also to all sorts of corporations such as towns, universities, guilds, or estates in as far as they still had some autonomy. This republic of letters, as Mokyr emphasizes, was a uniquely European phenomenon. Comparison with the case of China shows that this empire did not develop a culture of growth, amongst other reasons because it lacked a market of ideas and the accompanying necessary infrastructure. That, in turn, was because it lacked the political structure that would make such a market possible. When it comes to useful knowledge Europe was already strikingly different from the rest of the world long before the Great Divergence.

Even for those who, like me, would be willing to accept Mokyr’s thesis that Europe developed a market for new ideas, the question remains how one can connect it to concrete economic innovation. The Enlightenment was a broad European ‘project’ in which several regions were involved, e.g. parts of Italy and Central Europe, that were not exactly frontrunners when it comes to economic growth. It is not easy to pinpoint when exactly it occurred, but all scholars would agree that modern economic growth emerged decades later. Much of the new science was abstract and complex, but many if not most of the innovations of the First Industrial Revolution were concrete, made on the floor by practical craftsmen, many of whom had no link to enlightened thinking.⁷

Not surprisingly, several scholars therefore qualify the role of science in the First Industrial Revolution. Deirdre McCloskey, for example, claims

6 One could discuss whether there are not also relevant differences between the ‘logic of science’ and that of an ordinary ‘economic’ market.

7 See for these comments, Gregory Clark, ‘Review essay: *The enlightened economy. An economic history of Britain, 1700-1850*, by Joel Mokyr’, *Journal of Economic Literature* 50:1 (2012) 85-95.

that it did not matter to most of the economy until the twentieth century.⁸ Mokyr rightly considers such claims exaggerated. Science already did play a role at the time of the First Industrial Revolution in the development of e.g. the steam engine, gas lighting, or in ballistics and hydraulics. But, more importantly, so he emphasizes, indirectly it was already very prominently present in the spread of a Baconian scientific mentality with its focus on tinkering, experimenting, and rational argument. Even more importantly, without some theoretical ‘scientific’ underpinning, the know-how of even skilled practitioners would quickly have hit a ceiling. The so-called Second Industrial Revolution, that began in the second half of the nineteenth century would have been unthinkable without science. But Mokyr also, and again rightly, stresses the fact that without the practical, often tacit knowledge of the craftsmen science too, economically speaking, would have been a dead-end street. Someone had to transform the abstract principles of science into functioning machines, and maintain, repair and adapt them. Skilled craftsmen were the ones who could turn the Enlightenment in an ‘industrial enlightenment’. In this respect Great Britain, the first industrial nation, was different and more advanced. It had more and more skilled mechanics and an industrial culture in which scientists, tinkerers, artisans, and entrepreneurs interacted more than anywhere else.

Mokyr has written an excellent, well-structured book about a relevant topic. He is knowledgeable, open-minded, always nuanced and fair in his judgments. On top of that he writes well. His cultural analysis will – nevertheless – certainly be criticized by more hard-nosed economists like Gregory Clark as being ‘casual’ and producing results that cannot be tested ‘empirically’. Such critique is unfair and exaggerated and makes one wonder how one could tackle Mokyr’s topic less ‘casually’ and more ‘empirically’.⁹ Deirdre McCloskey, in contrast, applauds Mokyr’s cultural turn but claims he ‘... has not studied rhetoric with any seriousness, or cultural anthropology or literary criticism – all rubbish he is quite certain.’¹⁰ I can only hope Mokyr stays clear of both extremes. Most economists will be happy to see that Mokyr is a firm believer in the market. For him the transition to the free market is a necessary precondition for economic growth to become ‘the norm rather than the exception.’¹¹ I personally think that economic theory

8 See McCloskey’s review of *A culture of growth* in *Prospect Magazine*, September 15.

9 See for these comments, on a previous ‘culturalist’ publication by Mokyr, Clark, ‘Review essay: *The enlightened economy*’, 85–95.

10 See her review of *A culture of growth*.

11 Mokyr, *Enlightened economy*, 8.

as well as economic history show that he is far too optimistic here.¹² But apart from that, my points of critique are too much matters of detail to be discussed in an review like this.

Where do we go from here? Mokyr's book is about the origins of a culture of growth and the modern growth economy. It inevitably makes us think about their future. According to several scholars that future looks rather bleak. Talk about 'the great stagnation' 'secular stagnation' or 'the fall of growth' is rife.¹³ There are many aspects to this phenomenon. Here I only deal with the thesis that growth-promoting innovations are becoming increasingly scarce. In any case when it comes to technological development Mokyr, who is very actively involved in the debates about 'the end of growth', is not a 'stagnationist' as he recently declared in an interview: 'I take a very optimistic view. I think if you want to summarize the future of technology, the short summary is, You ain't seen nothing yet.'¹⁴ I personally would be somewhat less optimist, at least when it comes to the broader subject of the future of (the culture of) economic growth. To some extent that is on the basis of Mokyr's own analysis. Science will undoubtedly continue to 'progress'. Scientific research has become too big and too competitive an enterprise to expect otherwise, even when it may have become less open. I also see no reason to expect that technological progress as such will disappear or even slow down. But that does not mean that the same would apply to (the culture of) economic growth. I can easily imagine a future of innovation that destroys more jobs – and incomes – than it creates with potentially disastrous consequences for economic growth. By far the majority of people in the West now work in services. The effects of innovations in that sector on economic growth have always been much less impressive – to put it mildly – than in industry or agriculture.

Serious doubts are in order when it comes to the core idea of the Enlightenment as Mokyr sees it, the idea of progress. That idea in the last

12 To extensively expound this claim would require too much space. I just refer to two of my publications: *Escaping Poverty. The origins of modern economic growth* (Vienna and Göttingen 2013) and *State, economy and the Great Divergence, Great Britain and China, 1680s-1850s* (London 2015).

13 Tyler Cowen, *The Great Stagnation. How America ate all the low-hanging fruit of modern history, got sick and will (eventually) feel better* (New York 2011); Larry Summers, 'The Age of Secular Stagnation: What it is and what to do about it', *Foreign Affairs* 15-02-2016; Robert Gordon, *The rise and fall of American growth. The U.S. standard of living since the Civil War* (Princeton and Oxford 2016).

14 See the interview with Mokyr by Ana Swanson on Wonkblog in *The Washington Post* of 28 October 2016.

instance was based on the assumption that consensus is possible about what counts as knowledge and how to acquire it. I cannot help thinking that in our postmodern age in the West this consensus has disappeared. As undoubtedly has the idea of progress, in this respect and more in general. The idea of expertise that was so prominent in enlightened thinking is certainly past its prime. Increasingly being known as an 'expert', 'professor' or 'journalist' is bad for one's credibility. It has become fashionable to not believe in science. Education played a central role in enlightenment thinking. Knowledge was considered good as it could be used to create a better world. So the more it could be spread the better. Here serious doubts have emerged whether there is still much undiscovered, low-hanging educational fruit and whether not a lot of theoretical knowledge is quite useless in strictly economic terms.¹⁵ Mokyr with good reason points at the fundamental role of mass media in spreading knowledge in early modern Europe. The modern mass media, including Internet and the so-called social media, spread 'information' in unprecedented amounts. But to what extent do they actually contribute to the growth and spread of knowledge as it was defined during the Enlightenment? Finally, Mokyr emphasizes the crucial importance for a culture of growth and progress of an institutional setting guaranteeing equality and freedom. Does that setting still exist? In the Western world inequality has reached dangerous levels and anti-Enlightenment authoritarianism is on the rise. Should that not dampen optimism about the future of the culture of growth?

At the end of his book Mokyr writes, 'The question that will inevitably be raised is whether the Enlightenment in Europe was a necessary or sufficient condition for the great breakthroughs that led to economic growth and the modern economy.' (page 340) He considers it highly unlikely that modern economic growth could have come into existence without the Enlightenment and its preconditions, as they existed in the West. So we may consider it a *necessary* condition. The question whether it was a *sufficient* condition is not really dealt with subsequently. I consider that highly unlikely. But there can be no doubt about the huge importance of culture for the emergence of modern economies. It has nevertheless been ignored far too often in debates about the origins of the Great Divergence. Someone certainly needed to write a book like this. I cannot think of a better author than Joel Mokyr.

15 Ha-joon Chang, *23 things they don't tell you about capitalism* (London 2011) chapter 17; Cowen, *Great Stagnation*; Lance Pritchett, 'Where has all the education gone?', *World Bank Economic Review* 15, 3 (2001) 367-391.

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