The Historical Origins of The Modern Economy

RESTORING PROSPERITY Conference:

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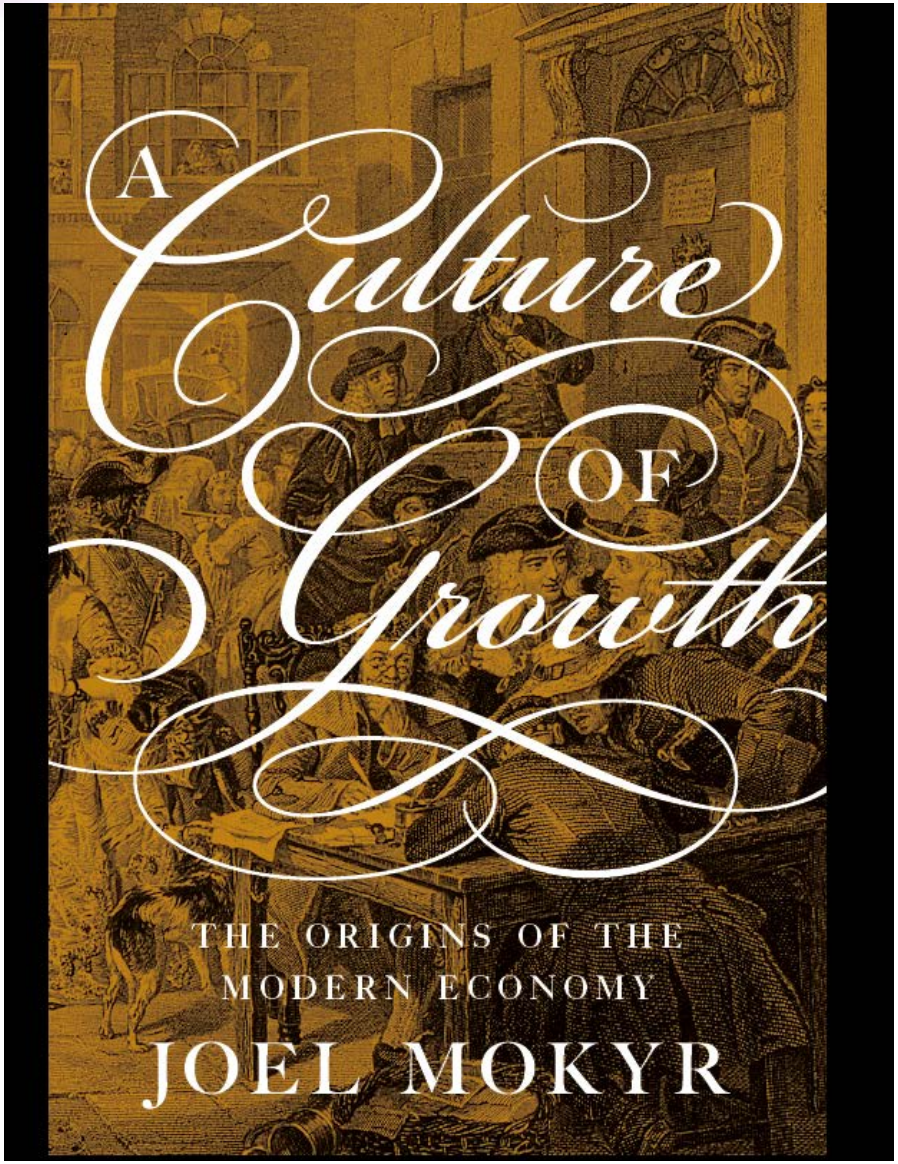

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The big question in economic history:

The question of the “Great Divergence” or the “Great Enrichment.” It remains the central question of economic history.

What were the origins of Europe’s sudden economic success in the late eighteenth century and beyond? Why there and then, and not anywhere else?

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One possible answer:

In earlier work, I have pointed to what I called "the Industrial Enlightenment": a subset of the eighteenth-century European Enlightenment that focused on the idea of *economic progress* as a key to social improvement.

The Industrial Enlightenment was, much like the rest of the Enlightenment, a minority phenomenon: a set of cultural beliefs among the highly literate and educated elite of Western Europe. It is the mother of all UTHC movements (Mokyr, 2009; Squicciarini and Voigtländer , 2016).

The main ideological components of the Industrial Enlightenment were the following:

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A belief in progress

1. A belief that economic progress was possible and desirable and that nations could become richer and material life could improve.
2. The notion that "useful knowledge" (≈ S&T) held the key to such progress, that is, the improved understanding and manipulation of natural phenomena to generate innovations.
3. A detailed program on how to bring this about.

It is this belief that won out in the market for ideas in early modern Europe. But where did it come from?

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The Concept of a "Market for Ideas"

The basic model is built upon the concept of a "market for ideas" and its evolution in this period among a scholarly community of intellectuals.

The "market for ideas" --- is this a useful metaphor? Some important scholars have proposed the concept (Polanyi, 1962; Stigler, 1965; Coase, 1974).

Basically, in the market for ideas, intellectual innovators try to *persuade* "buyers" to accept their novel ideas and findings.

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Is this a real market?

Although the market for ideas is not quite a real "market," it is a useful metaphor. We can ask questions such as *how competitive* was this market, what were the *barriers to entry*, how high and prohibitive *transactions costs*, how many *taboos* does it observe, and how *efficient* is it? No "prices," but incentives matter.

The obvious (and possibly naïve) question that economists ask: What is the incentive here? why would one produce any kind of useful knowledge in the absence of a mechanism to appropriate the economic value of new ideas?

Much like any market, to understand it we need to ask which institutions were supporting it and make it work? This is the upshot of much of the work following the trailblazing insights of Douglass North and Avner Greif.

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This market, of course, is riddled with "market failures" and bad incentives

Institutions, after all, are about incentives.

1. Above all, there will be systematic underproduction of new knowledge because of its well-understood public good properties due to appropriability problems of new knowledge *(weak positive incentives*).

2. But there is a second issue that is at times under-emphasized: the fact that new ideas often degrade the value of the human capital of the existing orthodoxy and thus intellectual innovation will be resisted and sometimes persecuted as "apostasy" or "heresy" (Benabou, Ticchi, and Vindigni, 2014). *Strong negative incentives*.

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A Culture of Growth: the core argument

My argument is that in Europe between 1500-1700 the educated elite developed a culture and a set of institutions that were far more conducive for intellectual innovation and the accumulation of useful knowledge than before. They came up with a better solution to these difficulties than other societies (especially China and the Islamic world).

This is not to argue that the European institutions were in any sense "optimal" or even "good" --- just that they worked sufficiently well to produce in the end an effective market for ideas and thus an elite culture, which we can call "Enlightened" and that was far more friendly to the growth of useful knowledge than any other society.

What happened is that both the positive and the negative incentives in 1700 were much improved relative to 1500.

Major “shocks” to the European system after 1450

- Printing Press and improved communications.
- Great voyages
- Reformations
- Emergence of new tools and instruments to observe the world.
- Evolution of “nation states” and more advanced fiscal capacities and public finance.

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Major Intellectual innovations introduced in the market for ideas, 1500-1700

Among the many other new "cultural variants" that established themselves between 1500 and 1700 were heliocentrism, iatrochemical medicine, Vesalian anatomy, Cartesian dualism, blood circulation, Galilean mechanics, infinitesimal mathematics, the falseness of spontaneous generation, the presence of an atmosphere, the possibility of vacuum, Newtonian celestial mechanics, and much more.

Furthermore: the market for ideas in this age produced *meta-ideas* we associate with the "Industrial Enlightenment."

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The "winners" in the market for ideas in this era:

The three main ones associated with the Enlightenment were about social and economic progress:

- As noted already, the belief in the possibility and desirability of *human progress*.
- A (Baconian) conviction that "useful knowledge" is actually supposed to be *used* (that is, applied to production), which set a new agenda for scientific research and is instrumental in bringing about progress (the "industrial enlightenment").
- The loss of blind respect for the classical canon and a growing belief in the superiority of the "moderns" over the "ancients."

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The market for ideas produced many other important new "meta-ideas" that affected how it worked, that is, how intellectuals persuaded one another.

- The value of "experimental philosophy" in scientific research (Bacon etc.) and the persuasiveness of experimental results.
- The importance of mathematics and quantification as tools of the investigation of nature (Copernicus, Galileo, Newton).
- The importance of the systematic collection of facts and data, and classifying and organizing them in accessible forms looking for "empirical regularities" (purely inductive science).
- The religious virtuousness of research into natural philosophy (Merton, 1938), and the (eventual) separation of science from metaphysics ("*Sire, je n'avais besoin de cette hypothèse*")

So what brought this about? And can we learn something from it about the prospects for growth in our own age?

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How do markets succeed?

North-Greif view of markets: to work effectively, they need an *institutional foundation* that specifies the *incentives* that drive participants and enforces the *rules* by which this market operates.

In the case of the market for ideas, such an the institution was especially challenging because it had to overcome the public good properties of knowledge.

The institution created unprecedented incentives for innovators to engage in proposing new ideas to the market.

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These incentives, as noted, were of two kinds:

1. Increase *positive* incentives by finding ways in which intellectual innovators could be rewarded despite the obvious appropriability problems.

2. Reduce *negative* incentives by weakening the forces that would suppress innovation.

Against all odds, between 1500 and 1700 Europe produced an institution that did all that.

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The Solution found: a unique institution

Europe was not the first and only place to create a market for ideas.

But it was the first and only one to stumble upon an institutional solution supporting the market for ideas that actively encouraged intellectual innovation and led to an exponential growth in useful knowledge.

What emerged between ca. 1500 and ca. 1700 was an institution that solved the problem in a largely novel way. In so doing, it laid the foundation of a more efficient market for ideas in Europe and to all that it entailed (including the Great Enrichment).

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The "Republic of Letters": an early "virtual community"

Within Europe, the "intellectual commons resource" was organized after c. 1500 through a transnational (and later transreligious) community of scholars, which referred to itself as the *Respublica Literaria.*

This group included the European educated elite, the intellectual *crème de la crème:* scientists, physicians, philosophers, mathematicians (as well as theologians, astrologers, and mystical and occultist writers). Despite vigorous disputes, They were relatively homogeneous: educated, literate, polyglot, religious-but-open-minded, and most subscribed to a common ideology or culture.

What was the Republic of Letters?

It was an international network of European scholars and intellectuals of various stripes who shared and distributed new ideas and findings.

They did so through personal correspondence, publications, and (more infrequently) personal meetings. Most of it was a virtual network. No conferences and few brick-and-mortar institutions, except universities and a few scientific societies.

Within this network, its members established mechanisms that rated scholars by their influence and the quality of their work, and thus set up a reputation mechanism.

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Reputations and Incentives

Reputation mattered to many because it was correlated with patronage, awarded by princely and royal courts and universities.

But of course it mattered also for its own sake.

Moreover, in some cases there is clear evidence of pure intrinsic motives, in which case incentives may have been unimportant.

Reputation meant a special kind of property rights: “credit but no profit” --- many priority fights.

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Patronage was a highly competitive market:

Not only that the sellers (i.e., people with ideas and knowledge) competed in the market for patronage, but so did the buyers, that is, the courts, universities, and academies, who extended patronage to the top scientists and competed among themselves to attract the best and the brightest.

On the demand side: attracting famous learned people was partially a matter of prestige and ostentation. But powerful and rich rulers also wanted cutting-edge medical care, top-of-the-line tutoring for their children, and best-practice information and advice on topics such as ballistics and navigation from the smartest and best-informed people in Europe).

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Other features of the Republic of Letters

It was a *private order* institution, not controlled by any formal authority and transcended national boundaries.

It implied that intellectual innovations were placed in the public domain and not kept secret.

The Republic of Letters set the rules and norms for the "knowledge commons" in the age of Enlightenment.

Above all: the belief in "contestability" --- no sacred cows.

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What made the Republic of Letters possible?

On the supply side:

Of great importance was the improvement in *postal services* in sixteenth century Europe, associated with Francisco de Tasso (1459 - 1517), who established regular postal services in Italy, Germany and the Habsburg lands in the early sixteenth century and later throughout Europe. Similarly, in France, in 1603 Henri IV issues a decree that allowed royal couriers to carry private mail for a fee, and in 1608 appointed the first postmaster general.

And, of course, there was the obvious role of the *printing press*. Over time, it began to rely increasingly on publications, first books and pamphlets, but by the late seventeenth century something resembling "refereed" scientific periodicals began to emerge (e.g. the *Transactions* of the Royal Society).

Some brick and mortar institutions: universities (especially Padua, Paris, and Leyden), academies.

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What explains its success?

1. The Republic of Letters could thrive because it was to a considerable extent independent of political or religious one organizations. As a result, cooperation and the exchange of ideas took place across national and religious boundaries, thus realizing Polanyi's (1962) ideal of a collaborative community of scholars.

2. It could do so because its "citizens" took advantage of the political fragmentation of Europe by limiting rulers and organized religion from intervening or controlling knowledge creation. When necessary, they used foreign publishers to circumvent censorship, and *in extremis* footloose members moved from one nation to another and played one power against another.

The decline of "negative" incentives

Notwithstanding some famous cases such as Galileo's notorious trial in 1633, the cases in which intellectual innovators were effectively suppressed declined to a trickle after 1650. It becomes little more than window-dressing in the eighteenth century.

Radical thinkers were still strongly denounced as heretics and blasphemers, but no longer persecuted. Some marked examples: Spinoza, John Toland, Julien LaMettrie.

In part this was because of a change in beliefs and a decline in intolerance. But the political fragmentation and competition between dynasties, polities, and religions made coordination by reactionary powers almost impossible.

Because the Republic of Letters provided people with *international* reputations, the best intellectuals always had strong outside options. This made for a highly competitive continent-wide market for the best and the brightest, and made suppression of radical new ideas impracticable.

The significance of competition and mobility was that European rulers and patrons were limited in their ability to force their clients to accept their views (and knew it).

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The Republic of Letters helped realize economies of scale

It created a unified, pan-European institution that allowed intellectuals to enjoy a much larger constituency than they would have in their often small home-countries.

In that sense Europe had the *best of all possible* worlds between political fragmentation and intellectual unification. It was diverse and pluralistic, yet it was intellectually "integrated" in that there was a more or less unified market for ideas and intellectuals catered to a thin but *continent-wide* constituency.

New knowledge and discoveries diffused (relatively) rapidly over the entire Continent, and what seemed at the time to be demonstrably superior ideas were eventually adopted widely.

Most important for economic history

The commitment to the **Baconian Program** and the idea of **progress** was one of the outcomes of the market for ideas in early modern Europe. By 1700 it had become close to a consensus among Enlightenment thinkers (and not just in Britain).

Without it, the Industrial Revolution would have looked very different.

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Implications for our own time

- There is a cruel tradeoff between the costs and benefits of political fragmentation and centrifugal forces. We have to weigh the costs of coordination failures against the advantages of an internationally competitive market for ideas, in which Sputnik effects and Nitrogen Fixing races need to be weighed against the coordination failures in terms of the costs of war, protectionism, and environmental damage.

- The one area on which there is no ambiguity is in the allowance of ideas and the people who carry them to move freely about the world so that no society that decides it dislikes a particular new idea such as cloning, genetic engineering, or nuclear power for some reason can stop it altogether. The motto “in nullius verba” should still be respected.

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- The incentive system we have in place for creative people and innovators (patronage + non-monetary awards) works fairly well and may not need much tweaking. In a few areas, there is the additional incentive of capturing some fraction of the social surplus of some inventions. The patent system is another matter altogether, of course.

- The outlook on the technological front looks rosy; the politics is another matter. It is for good reason that economic historians speak of technological *progress* but institutional *change*.

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Thank you.

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