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Kenneth Pomeranz. *The Great Divergence: China, Europe, and the Making of the Modern World Economy.* Princeton: Princeton University Press, 2000. x + 382 pp. $20.00 (cloth), ISBN 978-0-691-00543-0.

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Lucky England, Normal China

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Explanations of the Industrial Revolution abound. The debate over its origins has been called a well-squeezed lemon, yielding few new drops of insight. Ken Pomeranz's brilliant analysis, however, fundamentally reorients discussion of this hoary question by placing it in a comparative global framework.

It is not easy reading. Close argumentation is joined to meticulous empirical comparison, derived from the best, most up-to-date studies of China and Europe. Although he does not introduce new primary sources, he gleans valuable data from many monographs. He focuses mostly on England and the lower Yangzi delta of China [Jiangnan] from the sixteenth to eighteenth centuries, but sometimes includes all of Europe, China, Japan, India, and the New World. The main thesis is, nevertheless, quite clear: that China, and Europe were basically similar in nearly all significant economic indices, including standard of living, market development, agrarian productivity, and institutional structures that affected growth. This fundamental similarity invalidates arguments stressing deeply rooted European singularities. The "great divergence"–a sudden, unexpected leap by England ahead of the rest of Eurasia beginning around 1800 came from two fortuitous circumstances: convenient coal supplies and access to the abundance of the New World. This huge windfall allowed England to escape the ecological trap toward which the entire continent was headed. The geological contingency which put coal and the Americas closer to the western than the eastern end of Eurasia dramatically reversed the fate of its regions.

Building on regional socioeconomic studies of imperial China, Pomeranz methodically bats down five categories of arguments for European uniqueness, referring to demography, markets, luxury consumption, labor, and ecology. In each case, he carefully teases out which differences matter. For example, many credit the much touted European demographic system, featuring late marriage, low percent married, but unrestricted fertility within marriage, with keeping down European populations. Asians, by contrast, were viewed as breeding heedlessly because of early and universal marriage. But, fertility control within marriage kept Chinese populations below their maximum, too, ensuring them life expectancies equal or greater than most of Europe, and roughly comparable standards of living. The special European demographic structure was not, in the end, economically significant.

Allocation of capital, labor, and land by competitive markets in China was if anything freer than in Europe. Imperial China, by and large, had free labor, substantial migration, frequent land sales, and enforceable property rights, which allowed efficient resource use, while even in the most modern parts of Europe, entailment restricted land sales, and urban guilds restricted craftsmen. In the rest of Europe, much more severe controls, from apprenticeship to serfdom, severely constrained investment and kept urban-rural income gaps high. Given these barriers, it is hard to make a case that income inequalities were any larger in China than in comparable regions of Europe.

Alternatively, others argue that Europe benefited not from its freedoms, but from its constraints. Large scale monopolistic merchants and luxury consumption by aristocratic and urban elites could have been the motor of industrialism. But China, too, had both merchant dynasties and crazes for fashionable goods. One example not cited by Pomeranz supports his point. Many believe that Nathan Rothschild, who died in 1836, was the richest man in the world, but his fortune pales by comparison with that of his contemporary Wu Bingjian, the Canton merchant known to Europeans as Howqua. Rothschild held capital equivalent to 5.3 million U.S. dollars in 1828, while Wus wealth amounted to 56 million American dollars, more than the entire Rothschild family. Did Wu sim-

ply invest his fortune in land? No, he actively managed much of his portfolio by investing with the Forbes family of Boston. In any case, capital was not the limiting factor for early industry, since the cost of establishing a factory was low. Land and materials were far more important.

Other arguments focus on the cost of labor. Did China's low-wage, dense populations discourage labor-saving innovation? Or were Chinese women forced to spin and weave in their households for wages below subsistence? Pomeranz finds male and female textile workers wages roughly equal, and not noticeably less than Europe's. Europeans did send more women to factories than China, but Chinese women sold their household products on competitive markets for fairly high prices. Again, the European difference does not matter.

Finally, both ends of Eurasia were running into severe resource limits by 1800. The most original part of Pomeranz argument is his effort to compare the degree of scarcity of productive resources like land and forests in Europe and China. He finds that China was not worse off than Europe at this time (contrary to common wisdom), but both were nearing exhaustion. China did suffer severe environmental deterioration in the nineteenth century, but Europe had a very narrow escape.

I find the evidence for these similarities convincing, and their implications large. The Industrial Revolution did not grow smoothly out of long term European superiority. England was instead a "fortunate freak" (p. 207) whose coal supplies, close to abundant water and accessible ports, made the steam engine economically feasible. China, whose main coal deposits were in the northwest, far from its textile manufacturers in Jiangnan, had no use for a steam engine, and no reason to overcome the huge cost of getting coal to the lower Yangtze. Such very local accidents of geology had a powerful effect on creating the preconditions for the first industrial breakthrough.

But the Industrial Revolution was both local and global. The leitmotifs of the book are the relationships between contingency, coercion, and global conjunctures. Although he stresses accidents, Pomeranz does not reject large-scale explanations. He invokes three kinds of contingency, each of which is linked to global processes: windfalls, unintended consequences, and the "Panda's Thumb" phenomenon, in which resources and organizations created for one purpose are diverted to serve an entirely different one. (As Stephen Jay Gould explains, the giant panda's thumb evolved not from a finger bone, but from the wrist).(Gould 1980, 22) New World silver, timber, sugar, and cotton were unexpected windfalls, but the resources alone were not the key. Instead it was the unintended consequences of New World colonization that mobilized them to solve Europe's ecological crisis, and European chartered trade companies were the Panda's Thumbs that collected these resources. Created not for accumulating capital, but for conquest, these quasi-private entities were given free reign to engage in the piracy and commerce needed to compete with more experienced and efficient Asian traders and run Caribbean plantations. Only much later did this organizational form, transmuted into the corporation, become the most efficient method of mobilizing capital for large industrial enterprises.

These trading companies projected European interstate rivalries overseas, connecting the European state system to global economic dominance. Military competition is universal, and China was no pacifist empire either. Where Europeans stood out was in the active protection of their commercial representatives abroad. China, by contrast, did not use its vast state power to protect merchants who settled in Southeast Asia, even when they were massacred by rivals. Here geopolitical strategy enters the economic story. Chinese dynasties from the fifteenth century on focused nearly all their military attention on Central Eurasia, where the nomadic warrior was the main threat. In Central Eurasia, the empire used force and diplomacy to ensure that frontier merchants could trade Chinas textiles for one essential product: horses. Other merchants had little strategic importance.

Colonization linked geographical contingencies, coercive capital organizations, and global conjunctures. But the most important benefits for Europe came not from Asia, but from the New World. The Caribbean and Brazilian plantation complex, and the southern American cotton and tobacco production system, were indispensable in providing the resources necessary for industrialization. Pomeranz revives older interpretations of the triangle trade with a new ecological twist. More important than profits were the "ghost acres" freed up by the ability to use the American lands. Sugar, timber, and cotton, if grown in Europe, would have used 10 to 15 millon acres, or two-thirds of England's total arable land, according to Pomeranz's calculations. This very special form of colonial exploitation radically distinguished the New World peripheries from the old. Because slaves needed large imports, grain and timber exports from North America to the Caribbean gave Northerners the income to buy British manufactures. Chinese frontier settlers, by contrast, established themselves as independent farmers with state support, and soon developed "import substitution" rural industries that competed with the lower Yangtze, reducing its linkages to the

periphery.

Consequences of Accident:

Pomeranz' provocative insights bring the Industrial Revolution debate up to date. Arnold Toynbee, who coined the term in 1884, saw it as a sharp discontinuity, characterized by free competition and the steam engine. The "early modernist" interpretation that arose in the 1970s saw it as evolving slowly out of centuries of special European development. The cycle of interpretation has returned to its origins, but with a difference. The great divergence now once again looks later, more sudden, and less "deep" than the early modernists believed. The crucial factors are now ecological, not technological or cultural, and vitally dependent on the "global conjuncture" that united the peoples of the world, not on their separate cultures. Interaction, ecology, and contingency have replaced separation, civilizational dichotomies, and determinism.

Stressing contingency also means rejecting the faith of classical economic theory in the determination of equilibrium by large-scale balancing of supply and demand. Newer economic theories, however, do recognize the large effects of small events, bringing economics closer to history. As Paul Romer, founder of New Growth Theory, has stated, "We must confront the fact that there is no special logic behind the world we inhabit. Any number of arbitrarily small perturbations along the way could have made the world as we know it turn out very differently. We are forced to admit that the world as we know it is the result of a long string of chance outcomes." (Romer 1994, cited in Lewis 2000, 252)

Pomeranz' argument has two other targets: those who see Western Europe as the only dynamic society before 1800, and those who see the Industrial Revolution as merely a shift in dominance within an integrated global system. The abundant evidence of similarities deals a heavy blow to Eurocentric interpretations, but I expect that the debate will not end. Diehards can always look for other unique factors. Recently, for example, many economists have recognized the significance of information to economic growth. Some have already begun to argue that Europe accumulated a larger stock of applicable technical knowledge than China by 1800. But once again, this may be a distinction without a difference. We do not know which knowledges really matter for economic growth, and how much of them Chinese and Japanese possessed. The pendulum will keep on swinging, as Europeanists proffer other special features while Asianists find their equivalents in Asia. But the more important implication is that England could just as easily have become Jiangnan, trapped in an ecological cul-de-sac. She had a narrow escape.

World historians ought to pay special attention to the implicit challenge to world system theorists. Much of this theorizing looks back from the twentieth century, as Marx looked back from the nineteenth. The conspicuous rise of Asia in the late twentieth century has led to a new recognition of the dominance of Asian economies in the past. (Frank) The system theorists share with the Eurocentrists a sense of long-term inevitability. They likewise give privileged attention to core areas, which diffuse impulses of change to the periphery. Now, in their view, the global economy has returned to a "natural" state that was interrupted by the nineteenth and twentieth-century imperialist interludes.

Such retrospective prediction is alien to the perspective of this book, which instead looks forward from the eighteenth century, when the future was no more obvious than it is today. We, too, should be prepared for more surprises. Extend the metaphor of exploration to the microscopic realm of biochemistry and the macroscopic realm of outer space, and we will find more windfalls, which will be exploited by contingency and coercion with global implications. Pomeranz' brilliant analysis will not end the debate on this subject, but he brings it up to the twenty-first century, a time of unprecedented global linkages accompanied by great uncertainty. No one interested in economic history, Asian history, or world history can ignore his powerful argument.

ENDNOTES

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