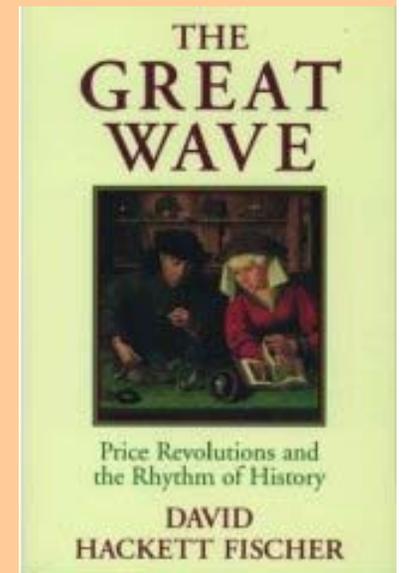
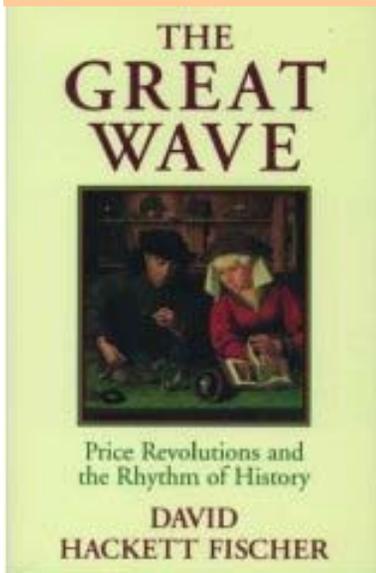


David Hackett Fisher

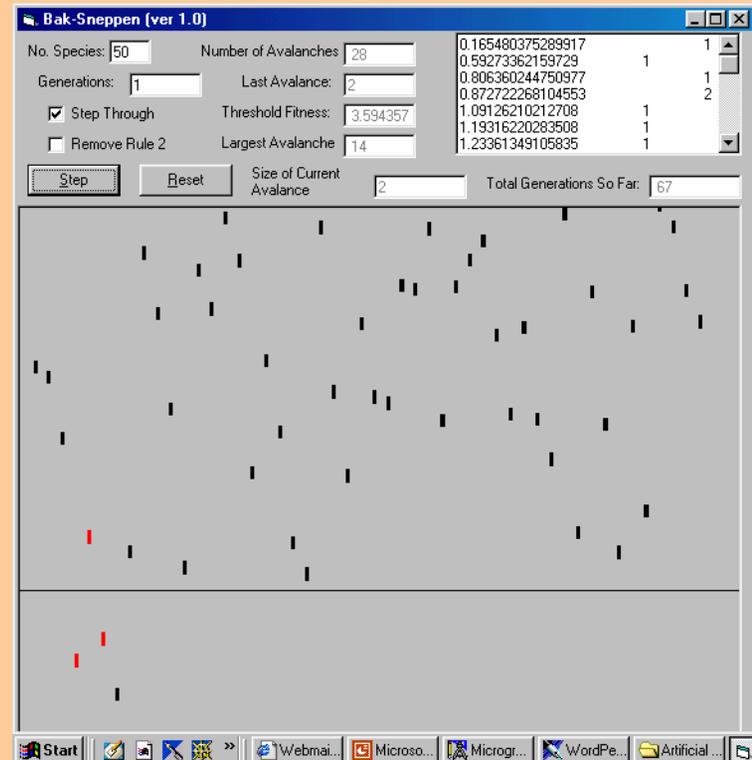
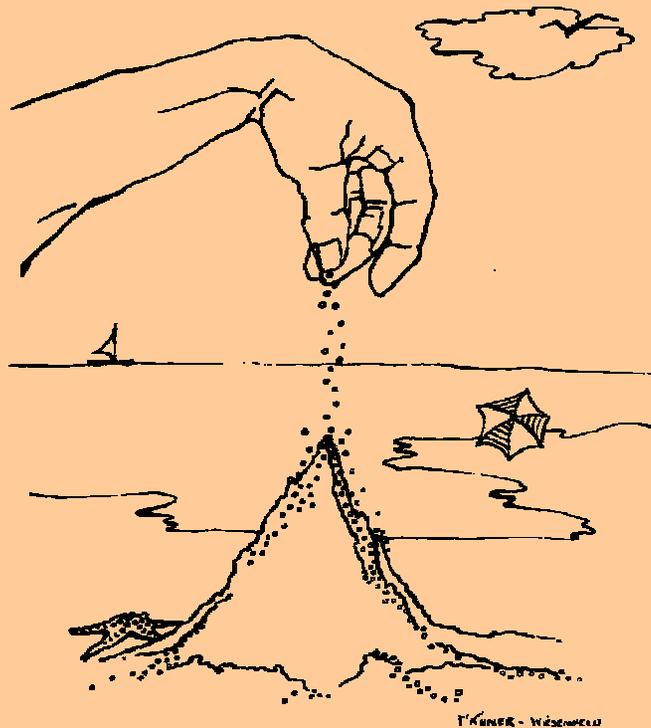


*The Great Wave:
Price Revolutions
and the Rhythm
of History*



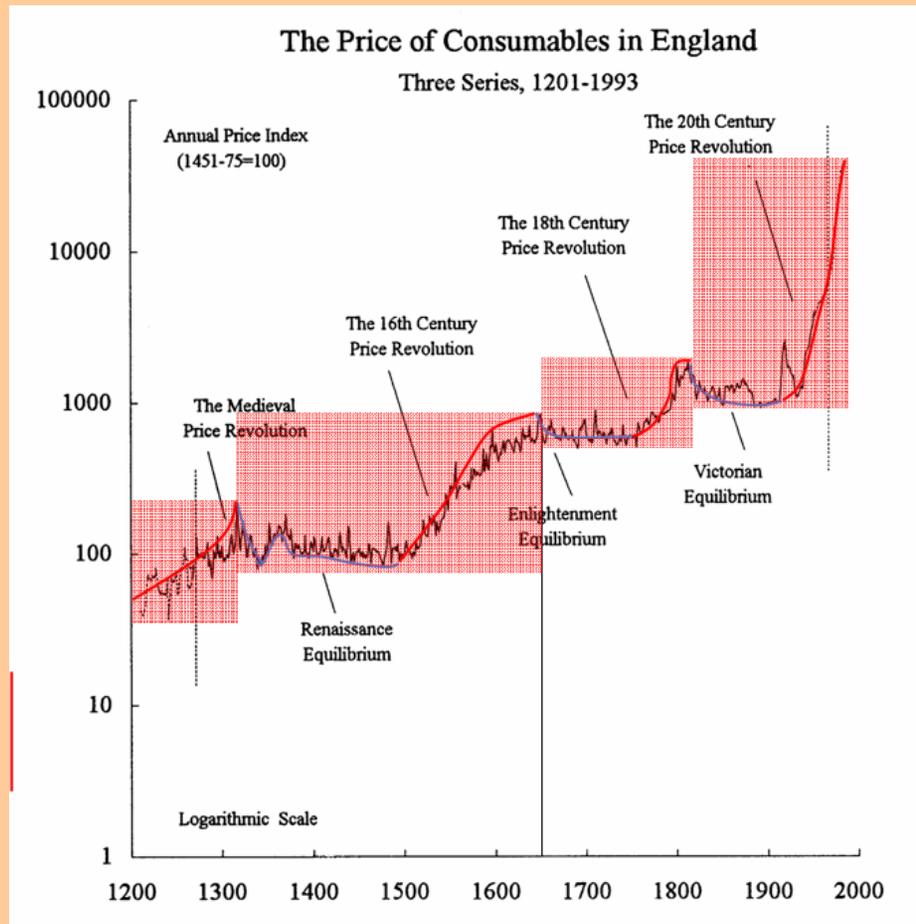
The Cycles of History:

Positive feedback self organizing to criticality, resulting in avalanches



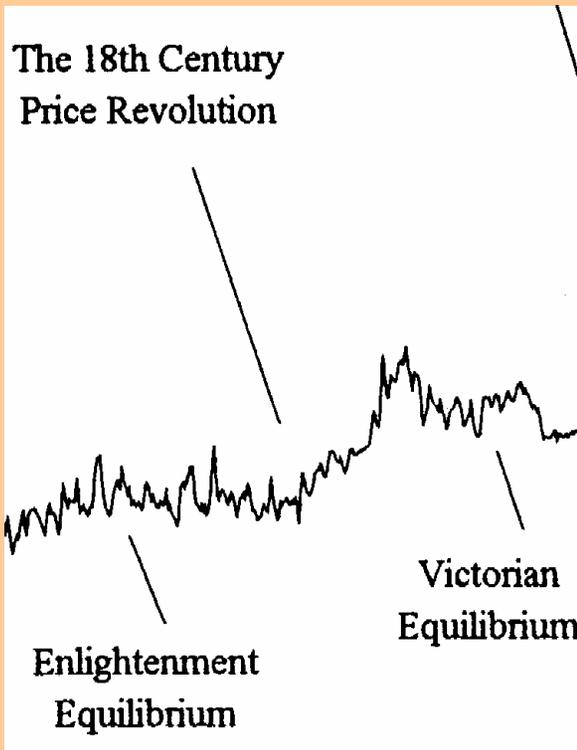
Avalanches are not catastrophes, they are inherent in the behavior of complex systems; catastrophes have no meaning, they just are

The Great Wave: Price Revolutions and the Rhythm of History



We found evidence of four price-revolutions since the twelfth century: four very long waves of rising prices, punctuated by long periods of comparative price-equilibrium. This is not a cyclical pattern. Price revolutions have no fixed and regular periodicity. Some were as short as eighty years; others as long as 180 years. They differed in duration, velocity, magnitude, and momentum.

The Great Wave: Price Revolutions and the Rhythm of History



The first stage of every price-revolution was marked by material progress, cultural confidence, and optimism for the future – an equilibrium condition.

The second stage was very different. It began when prices broke through the boundaries of the previous equilibrium. This tended to happen when other events intervened-commonly wars of ambition that arose from the hubris of the preceding period. These events sent prices surging up and down again, in a pattern that was both a symptom and a cause of instability. The consequences included political disorder, social disruption, and a growing mood of cultural anxiety.

The Great Wave: Price Revolutions and the Rhythm of History

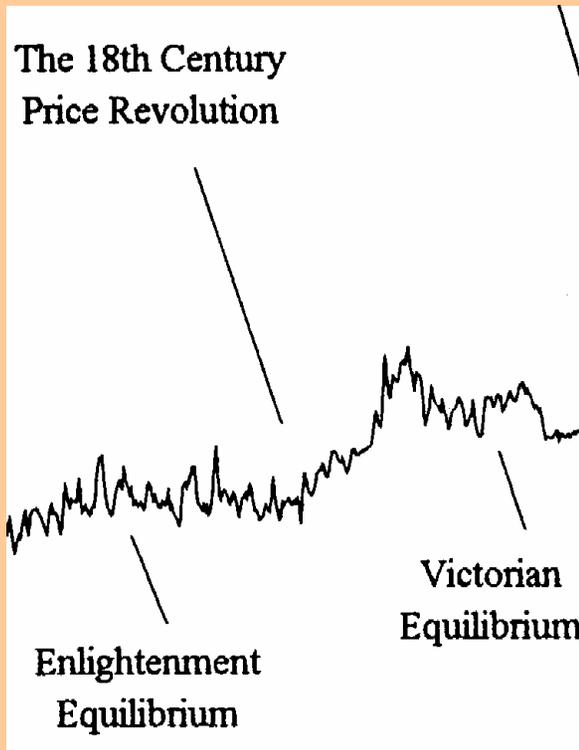


The third stage began when people discovered the fact of price-inflation as a long-term trend, and began to think of it as an inexorable condition. They responded to this discovery by making choices that drove prices still higher.

- hoarding, price gouging, cheating, price fixing, etc.

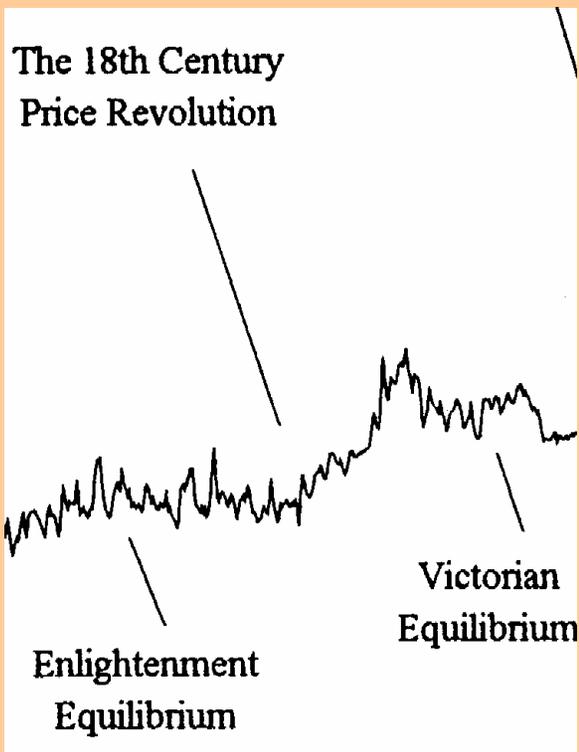
A fourth stage began as this new institutionalized inflation took hold. Prices went higher, and became highly unstable. They began to surge and decline in movements of increasing volatility. Severe price shocks were felt in commodity movements. The money supply was alternately expanded and contracted. Financial markets became unstable. Government spending grew faster than revenue, and public debt increased at a rapid rate. In every price-revolution, the strongest nation-states suffered severely from fiscal stresses.

The Great Wave: Price Revolutions and the Rhythm of History



Finally, the great wave crested and broke with shattering force, in a cultural crisis that included demographic contraction, economic collapse, political revolution, international war and social violence. These events relieved the pressures that had set the price-revolution in motion. The first result was a rapid fall of prices, rents and interest. This short but very sharp deflation was followed by an era of equilibrium that persisted for seventy or eighty years. Long-term inflation ceased. Prices stabilized, then declined further, and stabilized once more. Real wages began to rise, but returns to capital and land fell.

The Great Wave: Price Revolutions and the Rhythm of History



These material events had cultural consequences. In literature and the arts, the penultimate stage of every price-revolution was an era of dark visions and restless dreams. This was a time of lost faith in institutions. It was also a period of desperate search for spiritual values. Sects and cults, often very angry and irrational, multiplied rapidly. Intellectuals turned furiously against their envioning societies. Young people, uncertain of both the future and the past, gave way to alienation and cultural anomie.

It's the System . . .

We tend to view cultural, economic, social, political, scientific, artistic, religious events as largely separate or only loosely connected.

The lesson here is that when we says it's the system, what we mean is everything is connected with everything else by positive and negative feedback mechanisms, that are fractal, follow power-laws, and all the other universality principles of complex systems.

The First Wave

The Medieval
Price Revolution

1180-1350

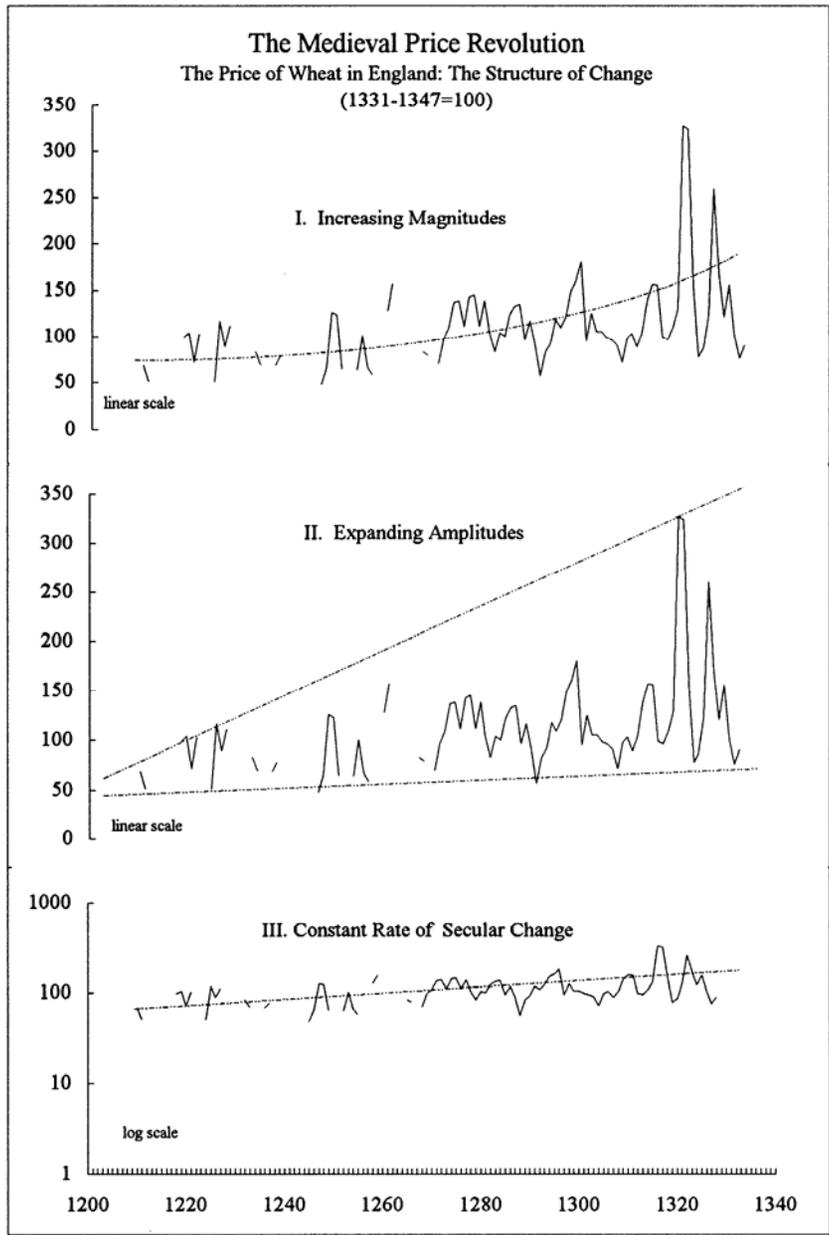


Figure 1.02 analyzes patterns of change in English wheat prices (1330/1-1346/7 = 100). Prices are for harvest years (e.g., 1347 = Michaelmas, Sept. 29, 1346, to Michaelmas, Sept. 29, 1347). Data are from a price series by D. L. Farmer in H. E. Hallam, ed., *The Agrarian History of England and Wales*, vol. 2, 1042-1350 (Cambridge, 1988), 779-91. Trends are fitted with an Excel 5.0 program.

The Crisis of the Fourteenth Century

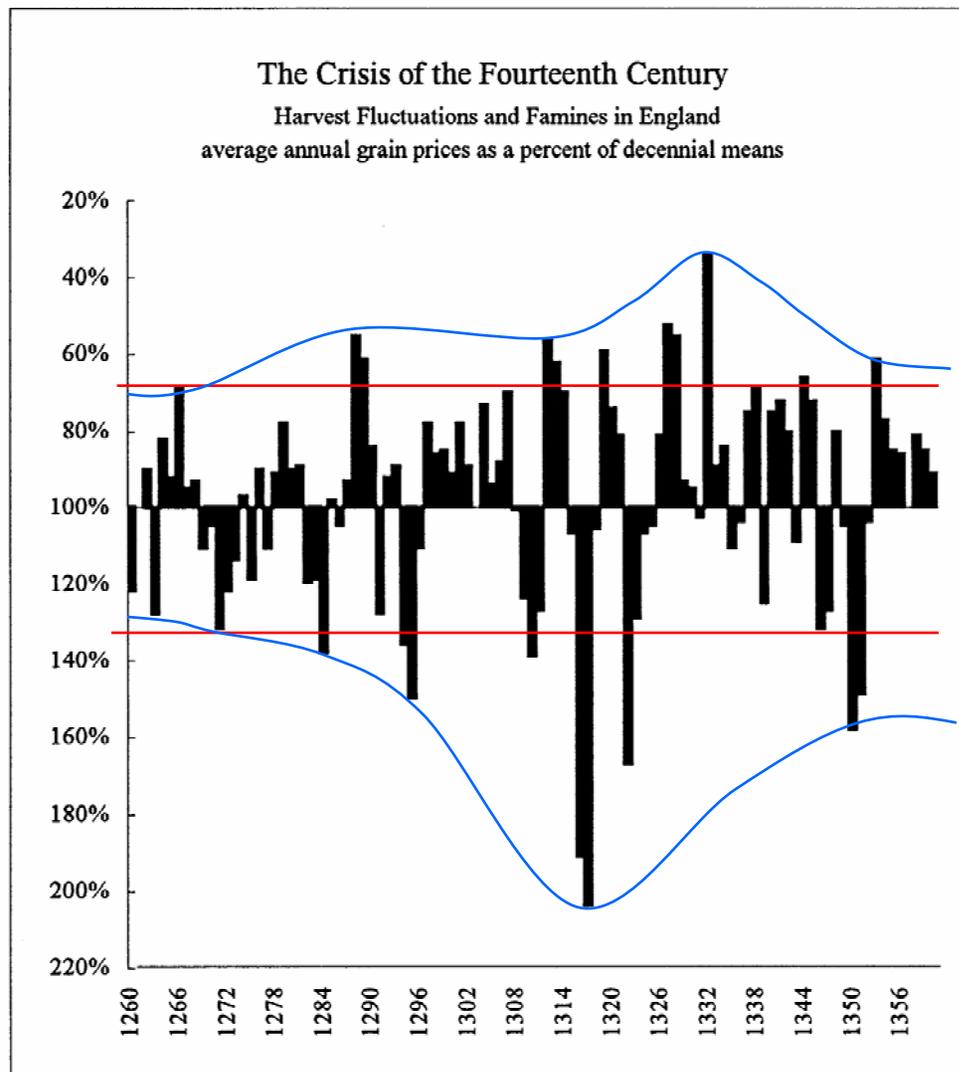


Figure 1.11 measures annual harvest prices as a percent of decennial means. Abundant crops drove prices down; scarcity sent them up again. The impact of scarcity grew more severe as the price revolution continued, reaching a peak in 1315-17, the worst famine in European history. This graph is created from price series in James E. Thorold Rogers, *A History of Agriculture and Prices in England*, vols. I & II.

Mitteo Villani

(contemporary witness of the plague)



“It was thought that people whom God by his grace in life had preserved . . . Would become better, humble, virtuous, and catholic, avoiding inequities and sins and overflowing with love and charity for one another. But . . . The opposite happened. Men . . . Gave themselves over to the most disordered and sordid behavior . . . As they wallowed in idleness, their dissolution led them into the sin of gluttony, into banquets, taverns, delicate foods and gambling. They rushed headlong into lust.”

In: Hollis, Why Good People Do Bad Things, p 144



As the web thickened, the price-revolution came to be elaborately embedded in entire economic systems, and social conflicts began to grow. The Protestant Reformation and Catholic Counter-Reformation shattered the most important unifying institution in the Western world – the Christian church. Religious conflicts of great violence broke out . . .

The Second Wave

The Equilibrium of
the Renaissance

The Equilibrium of the Renaissance

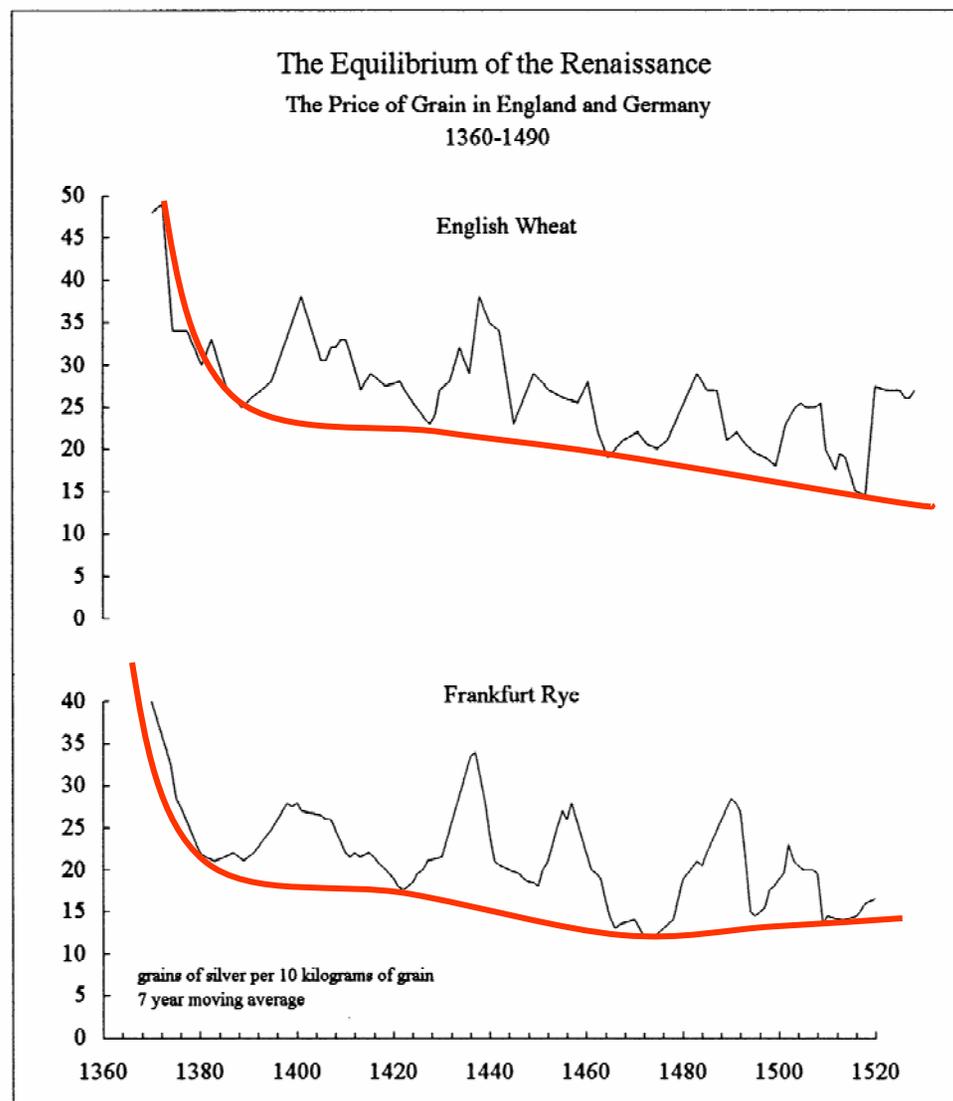


Figure 1.18 shows the long decline of grain prices that continued from 1360 to 1480 in most parts of Europe. The central tendency was stable for more than a century. The source is Wilhelm Abel, *Agrarkrisen und Agrarkonjunktur*, 66; for similar trends in France, see d'Avenel, *Histoire économique*, 2:518.

The Second Wave

continued

The Price
Revolution of the
Sixteenth Century

The Crisis of the Seventeenth Century

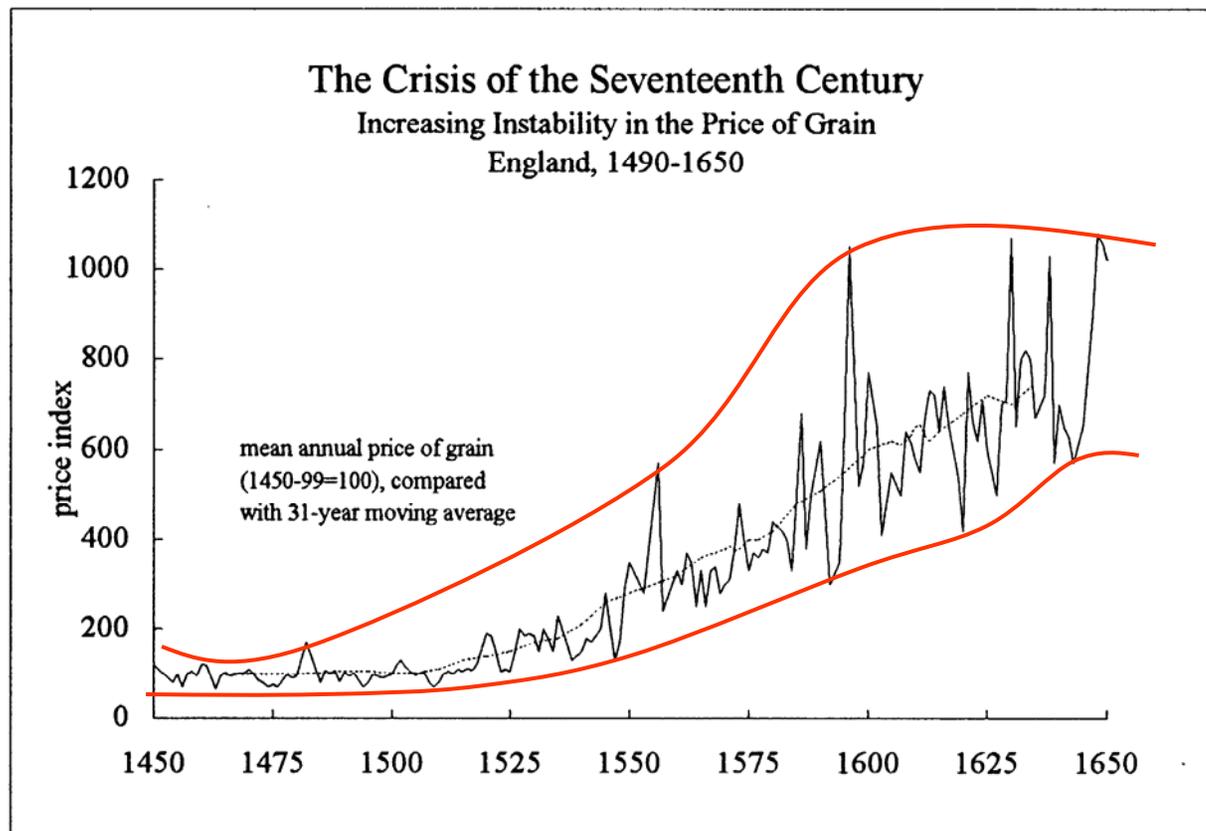


Figure 2.14 shows that harvest prices became more dangerously volatile as the price revolution approached its climax. It compares average annual prices of wheat, barley and oats with a 31-year moving average. The source is C. J. Harrison, "Grain Price Analysis and Harvest Qualities, 1465-1634," *Agricultural History Review* 19 (1971) 135-55, building on W. G. Hoskins, "Harvest Fluctuations and English Economic History, 1480-1619," *ibid.*, 12 (1964) 28-46; and "Harvest Fluctuations and English Economic History, 1620-1759," *ibid.*, 16 (1968) 15-31; and P. Bowden, "Statistical Appendix," in Joan Thirsk, ed., *The Agrarian History of England and Wales*, IV, 814-70.

“The general crisis of the seventeenth century left its mark upon the culture of an age. The greatest works of literature, painting, philosophy and theology in this era commonly express a mood of increasing pessimism and despair.”

Pieter Bruegel – The Fall of the Rebel Angels



“The general crisis of the seventeenth century left its mark upon the culture of an age. The greatest works of literature, painting, philosophy and theology in this era commonly express a mood of increasing pessimism and despair.

“In theology this was the era of neo-Calvinism – the narrowest, darkest, bleakest, and most pessimistic form of Christianity that has ever been invented.

“The crisis . . . was marked by a revival of religious strife. Protestants and Catholics, became increasingly militant and uncompromising.”

The Third Wave

The Equilibrium of
the Enlightenment

1660-1730

The Price of Wheat in Three European Capitals

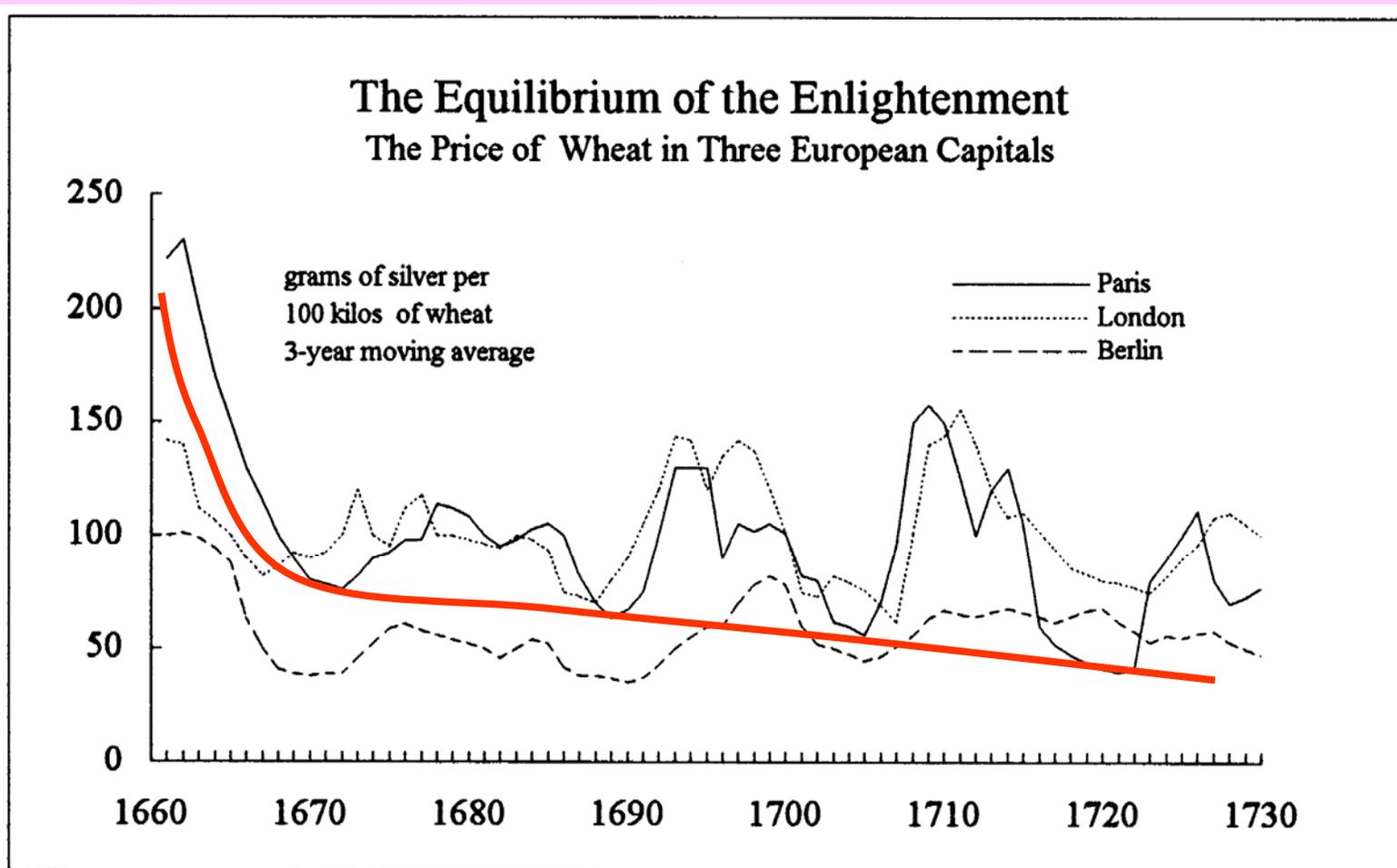


Figure 2.18 follows the price of grain in Paris, London and Berlin. In all three cities it fell sharply after 1661, then fluctuated on fixed level from 1670 to 1730. The source is Wilhelm Abel, *Agrarkrisen und Agrarkonjunktur: eine Geschichte der Land und Ernährungswirtschaft Mitteleuropas seit dem hohen Mittelalter* (1935, Hamburg and Berlin, 1966).

Staple Prices in America

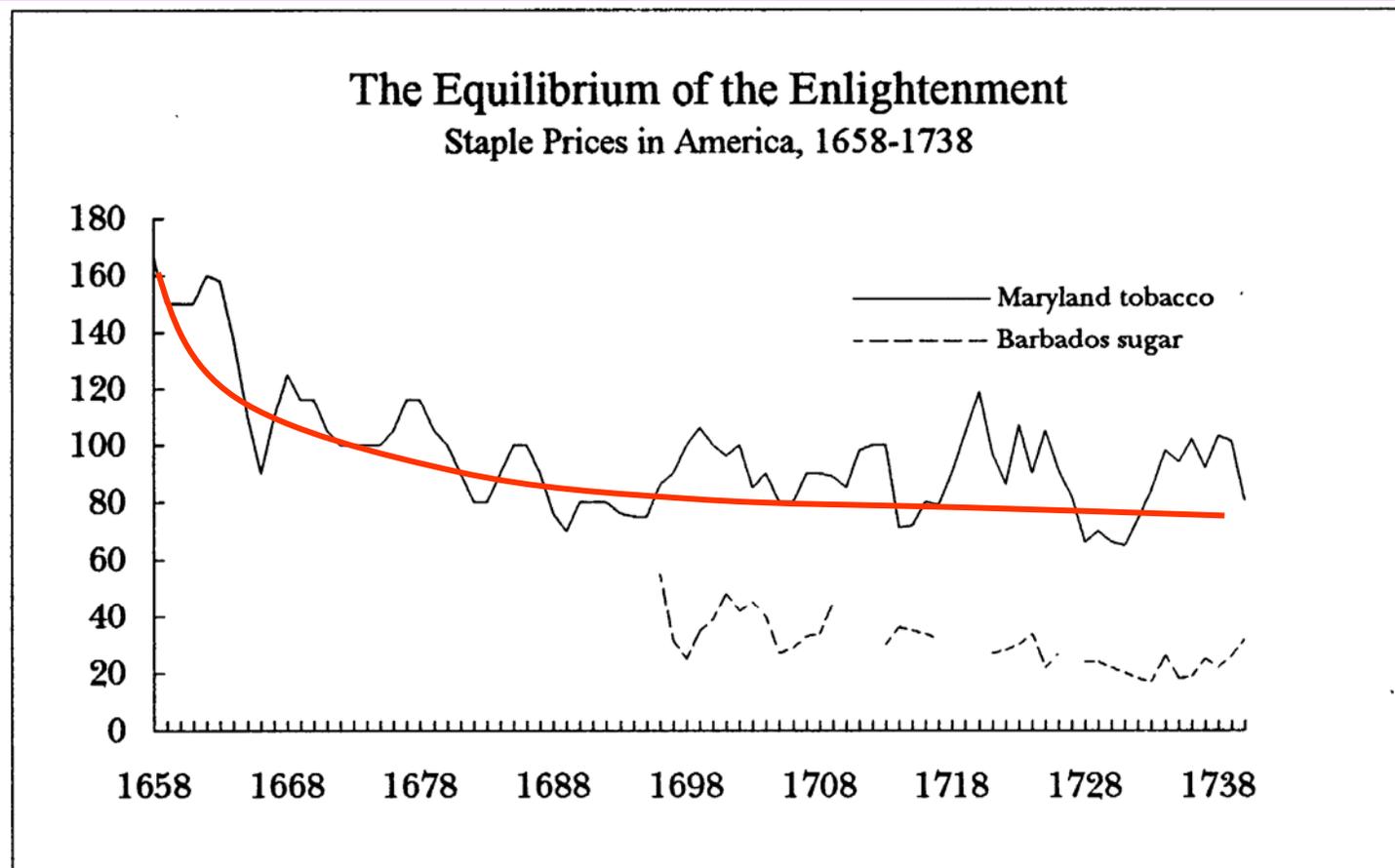


Figure 2.19 follows the price of Maryland tobacco (pence sterling per pound), and Barbadian sugar (shillings per hundredweight). Their movements were broadly similar to those of wheat prices in Europe during this period. The sources are Russell Menard, "Farm Prices of Maryland Tobacco, 1659-1710," *Maryland Historical Magazine*, 68 (1973) 80-85; Carville Earle, *The Evolution of a Tidewater Settlement: All Hallows Parish, Maryland, 1650-1783* (Chicago, 1975), 16; Richard B. Sheridan, *Sugar and Slavery: An Economic History of the British West Indies, 1623-1775* (St. Lawrence, Barbados, 1974), 496-97.

“Many rulers were called “great” in this era: Louis Le Grand, Frederick the Great Elector, Frederick the Great, Peter the Great, Catherine the Great.”



“These leaders were no more able than many of the failed monarchs who preceded them.”

“But, an age of equilibrium is kind to reigning kings. A reputation for greatness in a monarch often owes more to circumstance than to character.”

The Third Wave

continued

The Price
Revolution of the
Eighteenth Century

Commodity Prices in England, France, and the U.S.

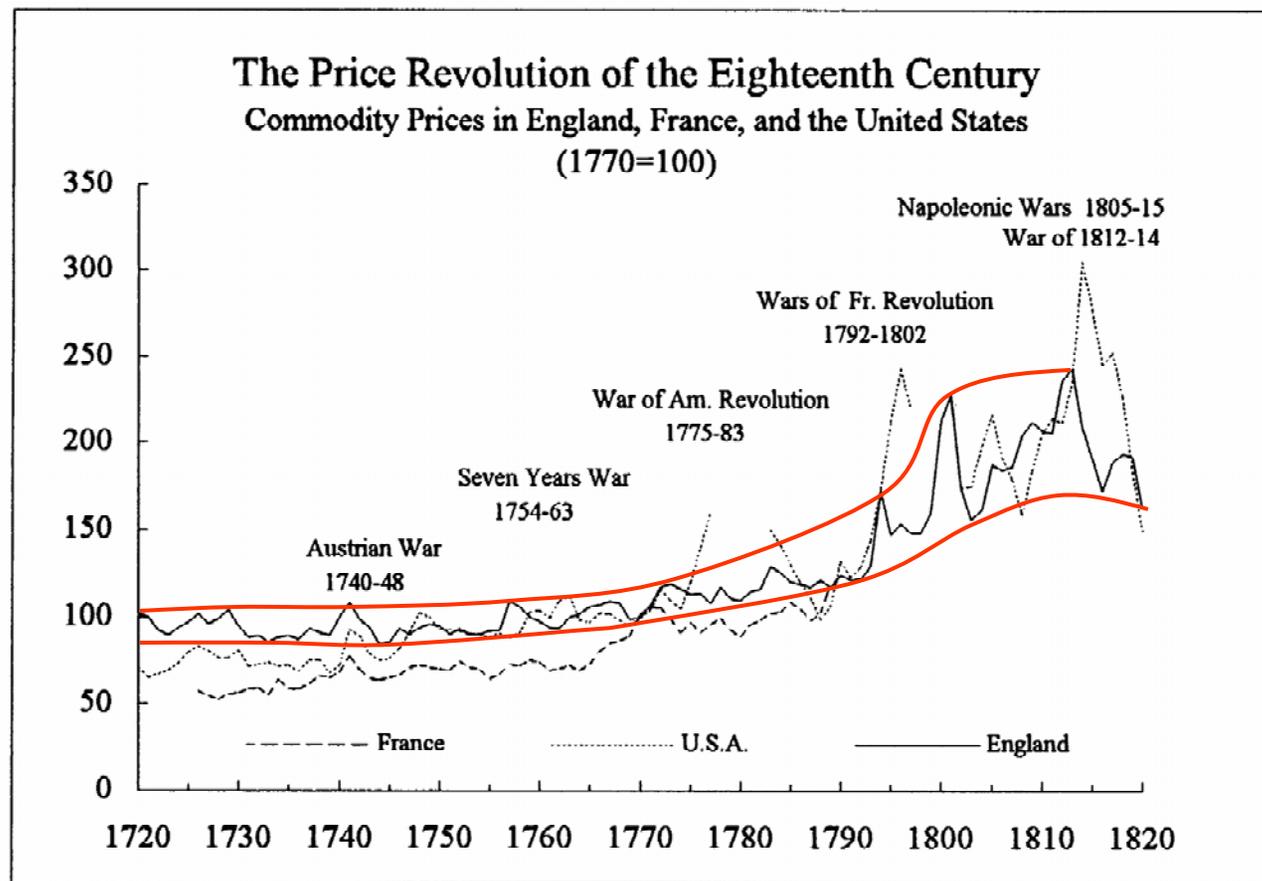


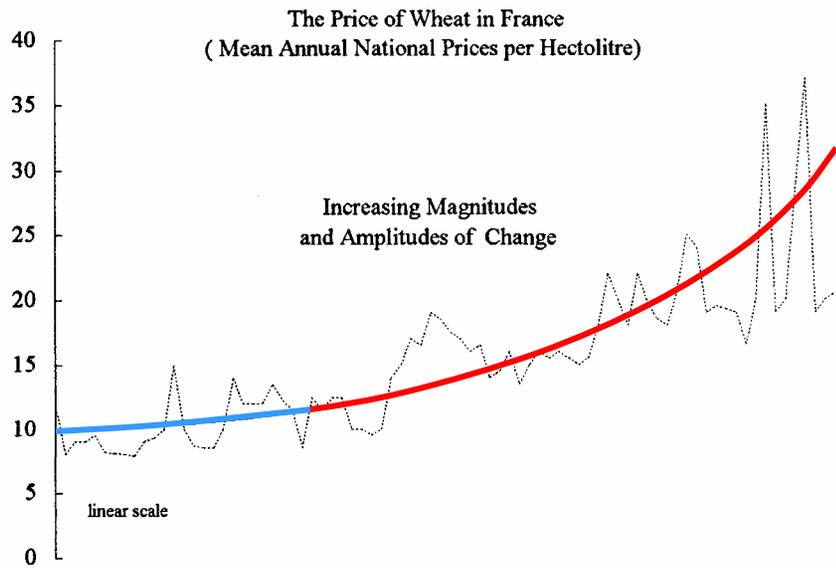
Figure 3.01 shows the profile of the eighteenth century price revolution in three nations. Sources include for England, the Schumpeter-Gilboy price index of 32 commodities, in B. R. Mitchell, *British Historical Statistics*, 719-20; for U. S. A., the Bezanson index of prices of 140 commodities in the Philadelphia market, *Historical Statistics of the U.S.*, series E111; for France, an unweighted index of agricultural prices in Ernest Labrousse et al., *Histoire économique et sociale de la France*, II, 386-87. All series are converted to a common base of 1770=100.

The Third Wave: Eighteenth Century Price Revolution

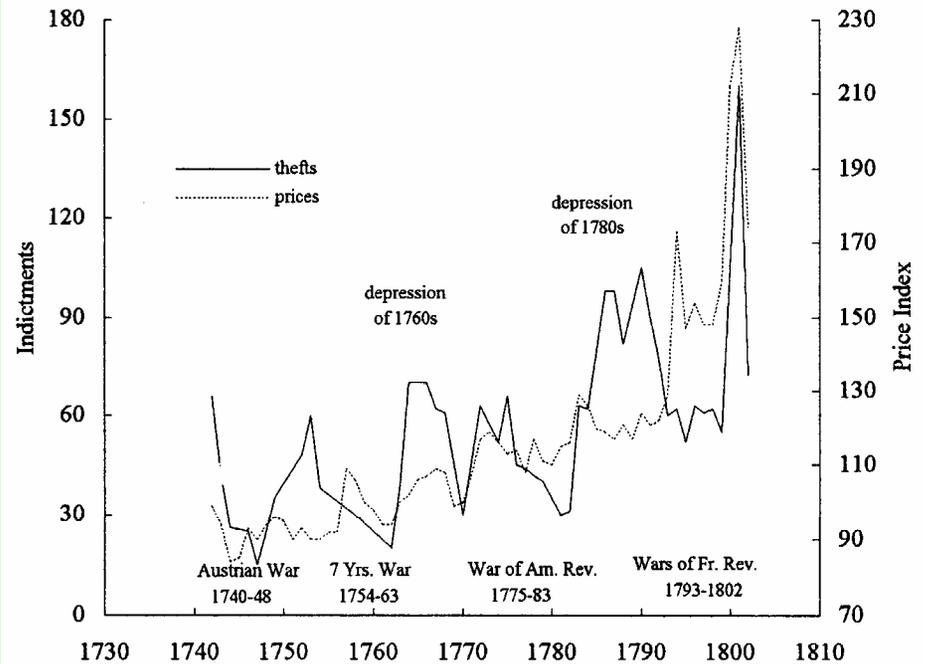


Price Revolution Begins: the new trend started slowly and silently, in much the same manner as the great waves that had preceded it.

The Price Revolution of the Eighteenth Century
The Structure of Change



The Crisis of the Revolutionary Era
Prices, Crime, War and Depression in England



The Third Wave: Eighteenth Century Price Revolution



“The primer mover of this price revolution was the increasing pressure of aggregate demand, caused by an acceleration in the growth of population.” (p 123)

“After a long pause from 1660 to 1720 the population of England began to grow more rapidly during the late 1720s, at precisely the same moment when the price-revolution started.” (p 124)

“Why did population grow . . . ? In demographic terms, it happened mainly because of a decline in age at marriage and a small rise in rates of intramartial fertility (driven by improvements in material conditions).” (p 124)

“Husbands and wives decided to have more children because the world appeared to have become a better place in which to raise a family.” (p 125)

The Third Wave: Eighteenth Century Price Revolution



“Governments responded to the price-revolution with various fiscal expedients that were also inflationary.” (p 128)

“As public spending tended to exceed income, the gap was filled with borrowing on a heroic scale.” (p 128)

- “So large was the French national debtthat it spawned a capitalist class called *rentiers*. (p 128)
- “Similar trends also occurred in Britain.” (p 128)

Both of which led to fiscal crises. National debt rose to then unimaginable levels and ‘consol’ (bond) values dropped. Whenever they did so, interest rates surged. (p 129)

The Third Wave: Eighteenth Century Price Revolution



“As the price-revolution continued, the rich and powerful generally did well for themselves.” (p 130)

“The mid-eighteenth century was a golden age for country gentry and landowning elites.” (p 130)

“In England . . . rents increased sharply during the Seven Years War, and kept on increasing thereafter.” (p 130)

“In France farm rents doubled during the middle decades, . . . And increased even more rapidly in many parts of Europe.” (p 130)

The Third Wave: Eighteenth Century Price Revolution



“While rents and interest kept up with inflation, wages fell behind. . . Real wages fell from as early as the 1730’s to the nineteenth century” (p 132)

“Increasing population . . . (which) drove up commodity prices also depressed real wages by expanding the size of the work force.” (p 132)

“The result of this (was a) decline in real wages . . . causing much suffering among the poor.” (p 132)

“In France farm rents doubled during the middle decades, . . . and increased even more rapidly in many parts of Europe.” (p 130)

The Third Wave: Eighteenth Century Price Revolution



“Soon after the price-revolution became clearly visible in the middle years of the eighteenth century a change began to occur in the cultural mood. (p 134)

“In 1756 a massive earthquake destroyed a large part of the city of Lisbon. This disaster inspired an outpouring of literature throughout Europe, which expressed a new spirit of skepticism, confusion, pessimism, and even cultural despair.” (p 134)

Religious movements overspread the Protestant world. Various called the Great Awakening, the evangelical movement, pietism. “Cultural and material trends simultaneously expressed underlying imbalances in the Western world. . .” (p 134)

The Third Wave: Eighteenth Century Price Revolution



“As individuals and governments tried to cope in various ways, cultural stresses of high intensity began to develop in western society.” (p 137)

“People not perceiving a scarcity, are apt to be jealous of one another; each suspecting another’s inequality of gain to rob him of his share, every one will be employing his skill and power, the best he can, to procure to himself the same plenty as formerly. This is but scrambling amongst ourselves and helps us no more against our want, than the struggling for a short coverlet, by those who lie together, till it is pulled to pieces, will preserve them from the cold.”

Anonymous English pamphlet, 1766 (p 136)

The Third Wave: Eighteenth Century Price Revolution



“As public revenue lagged behind expenditures, public debt began to grow rapidly, trebling in fifteen years from 1773 to 1788.” (p 140)

“These fluctuations gave rise to heavy speculation in public securities.” (p 140)

“Speculators found opportunities in the growing economic instabilities of this era, and created further instabilities in their turn .” (p 140)

“There were many financial collapses in the second half of the eighteenth century.” (p 141)

The Third Wave: Eighteenth Century Price Revolution



“This general crisis, like those that had preceded it, was also an intellectual event. The certainties of the Enlightenment were destroyed by the disorders that overtook the Western world. Confidence in reason and progress was lost. Their apostles became martyrs.” (p 154)

“Romanticism was most of all a new epistemology. It valued feeling above reason, intuition above empiricism, and ambiguity above clarity. It tended to look backward to the past rather than forward to the future. It had little faith in reason or hope for human progress. In Europe it often expressed a mood of melancholy, drifting even to despair.” (p 154)

The Third Wave: Eighteenth Century Price Revolution



“The great wave reached its crest and broke with shattering violence during the Napoleonic Wars (1796-1805). (p 155)

“With uncanny precision, prices reached their peak in each nation during the movement of its greatest military peril – Germany in 1808, Russia in 1812, Britain in 1812-13, the United States in 1814. The battles of Leipzig and Waterloo, Baltimore and New Orleans proved to be pivotal for the history of prices, as they were for politics and war.” (p 155)

**The wave had finally crested, and
broken . . .
Leading to the Victorian Equilibrium**

The Fourth Wave

The Victorian Equilibrium

Consumable Prices in England

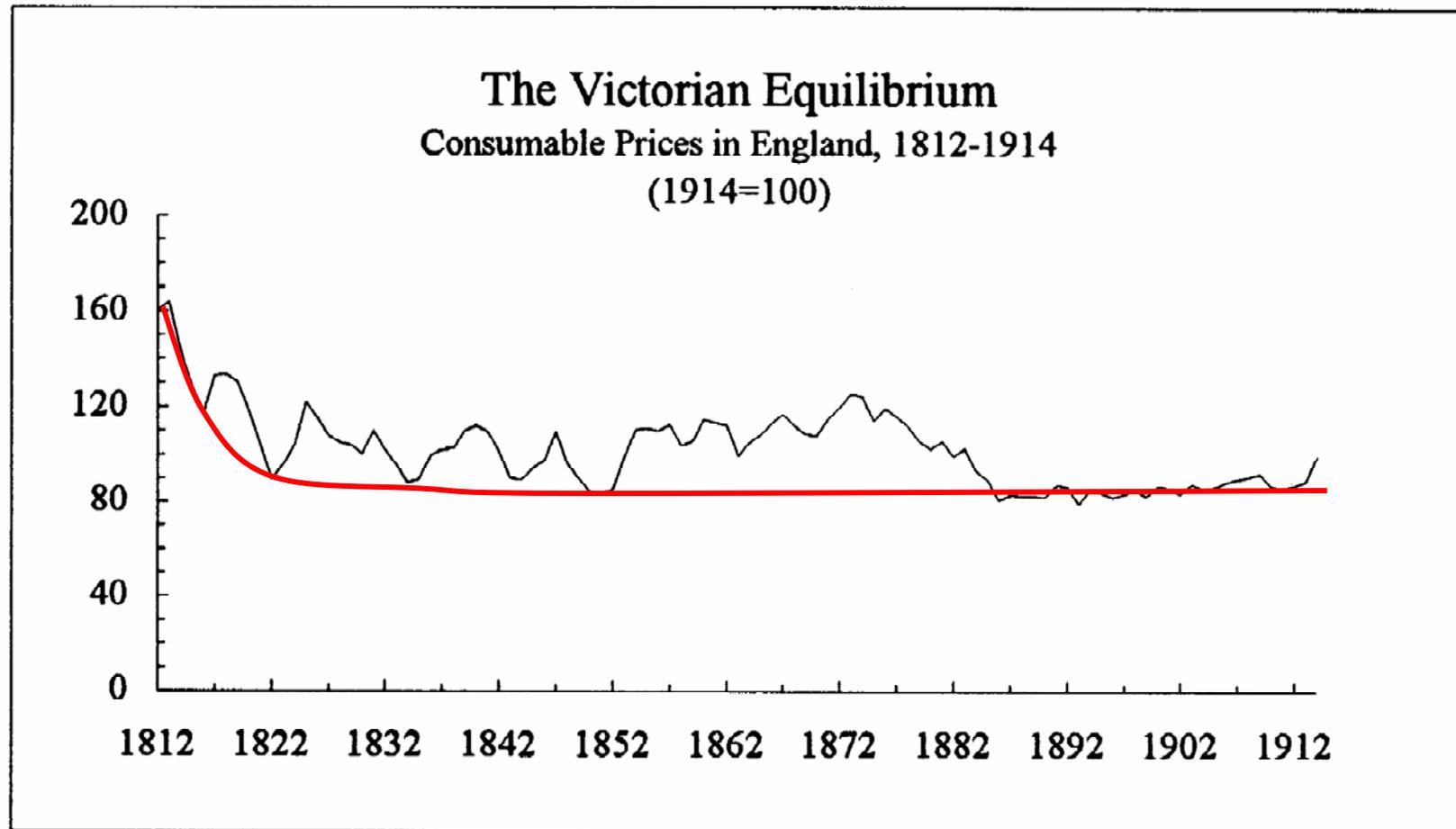


Figure 3.18 traces the movement of consumable prices in England from 1812 to 1914. A period of falling prices (1812-22) came after the crisis of the previous price-revolution. This deflation was followed by fluctuations on a fixed plane (1822-73), then by a second sharp deflation (1873-82), and yet another period of stability. The source is E. H. Phelps-Brown and Sheila Hopkins, "Seven Centuries of the Price of Consumables," *Economica* 23 (1956) 740-41.

The Fourth Wave

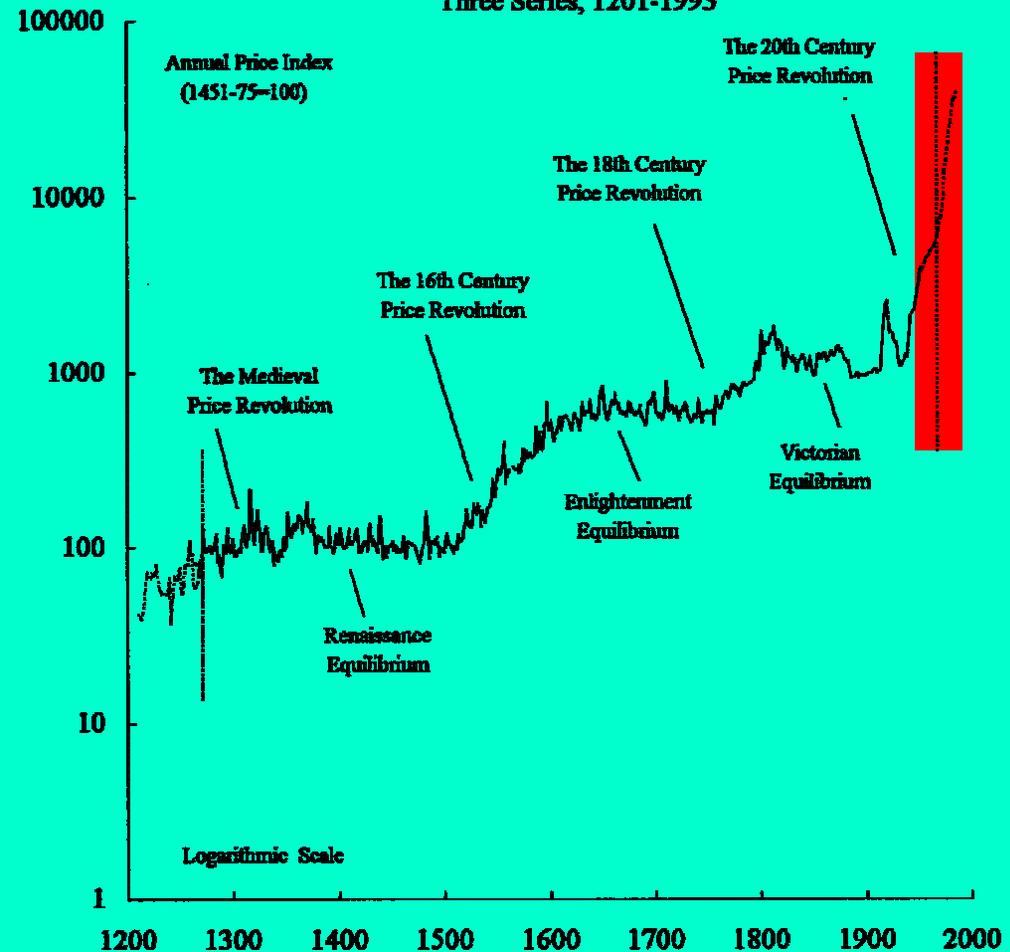
continued

The Price Revolution of the Twentieth Century

The Great Wave: Price Revolutions and the Rhythm of History

The Price of Consumables in England

Three Series, 1201-1993

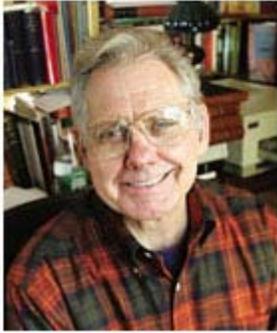


Fishers argues that looking at the long term historical trends, the world economic system today is near the top of the 20th century wave crest. The system is about as critical as it can get.

Cultural stresses are near the maximum, with great imbalances in just about every segment of society.

There is a general feeling of ennui and alienation among the world's citizens.

People are looking for stability and security – absolutes - in an unstable and insecure world.



David Hackett Fisher

The Troubles of Our Times

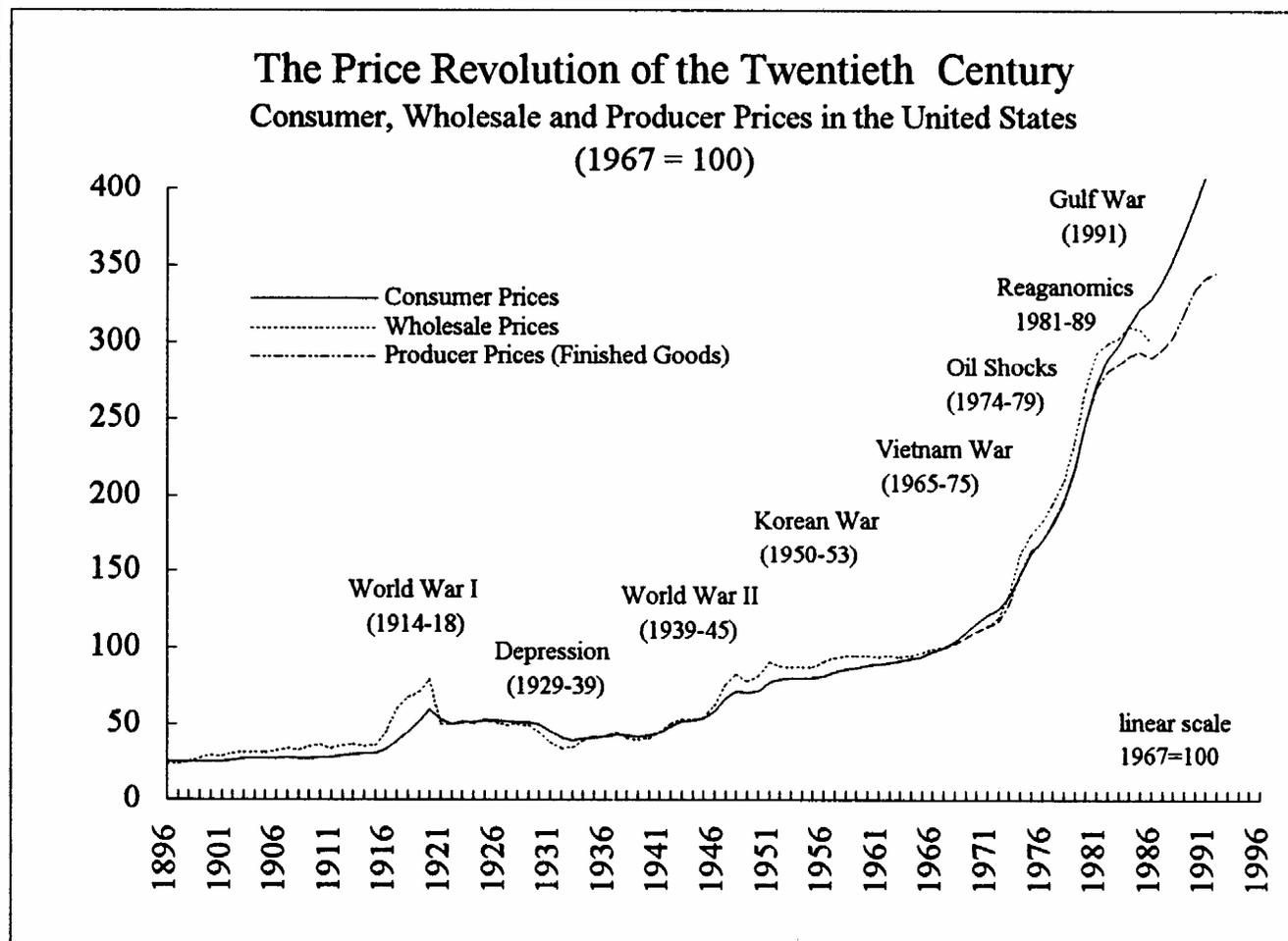
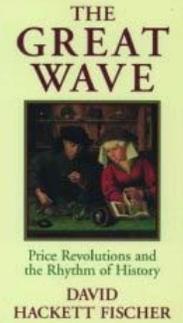


Figure 4.01 surveys annual price movements in the United States. Sources include *Historical Statistics of the United States* (1976), series E23, E135; *Statistical Abstract of the United States* (1988), table 735; *Statistical Abstract of the United States* (1993), tables 756, 764.

“We are not merely the objects of history but also its agents. The future is determined partly by free choices that people willfully make, often in unexpected ways. These human choices are not always rational. They flow from hopes and fears, truths and errors, memories and dreams. They are unpredictable, and sometimes unimaginable, before they are made.”

Where Are We Today?

Prices went higher, and became highly unstable. They began to surge and decline in movements of increasing volatility.

Severe price shocks were felt in commodity movements.

The money supply was alternately expanded and contracted.

Financial markets became unstable.

Government spending grew faster than revenue, and public debt increased at a rapid rate.

Wages, which had at first kept up with prices, now lagged behind. Returns to labor declined while returns to land and capital increased.

The rich grew richer. People of middling estates lost ground. The poor suffered terribly. Inequalities of wealth and income increased.

So also did hunger, homelessness, crime, violence, drink, drugs, and family disruption.

This was a time of lost faith in institutions.

It was also a period of desperate search for spiritual values. Sects and cults, often very angry and irrational, multiplied rapidly.

Kevin Phillips, The Old Titans All Collapsed. Is the U.S. Next? Washington Post, Sunday, May 18, 2008; B03

American Theocracy: The Peril and Politics of Radical Religion, Oil, and Borrowed Money in the 21st Century



“More than 80 percent of Americans now say that we are on the wrong track, but many if not most still believe that the history of other nations is irrelevant -- that the United States is unique, chosen by God. So did all the previous world economic powers: Rome, Spain, the Netherlands (in the maritime glory days of the 17th century, when New York was New Amsterdam) and 19th-century Britain. Their early strength was also their later weakness, not unlike the United States since the 1980s.”

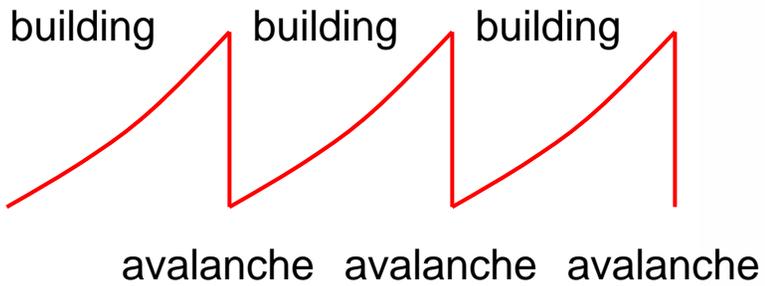
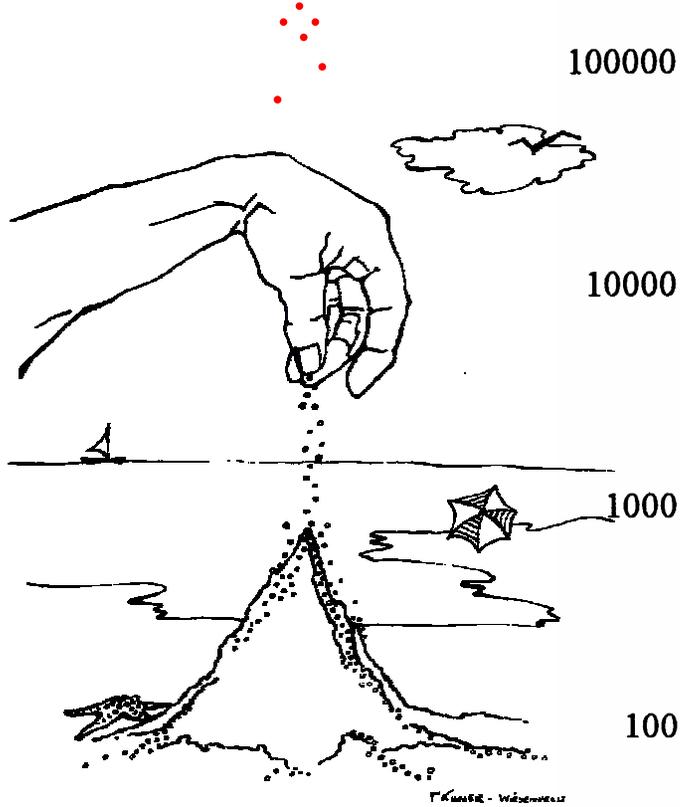
Kevin Phillips, *The Old Titans All Collapsed. Is the U.S. Next?* Washington Post, Sunday, May 18, 2008; B03



There is a considerable literature on these earlier illusions and declines. Reading it, one can argue that imperial Spain, maritime Holland and industrial Britain shared a half-dozen vulnerabilities as they peaked and declined:

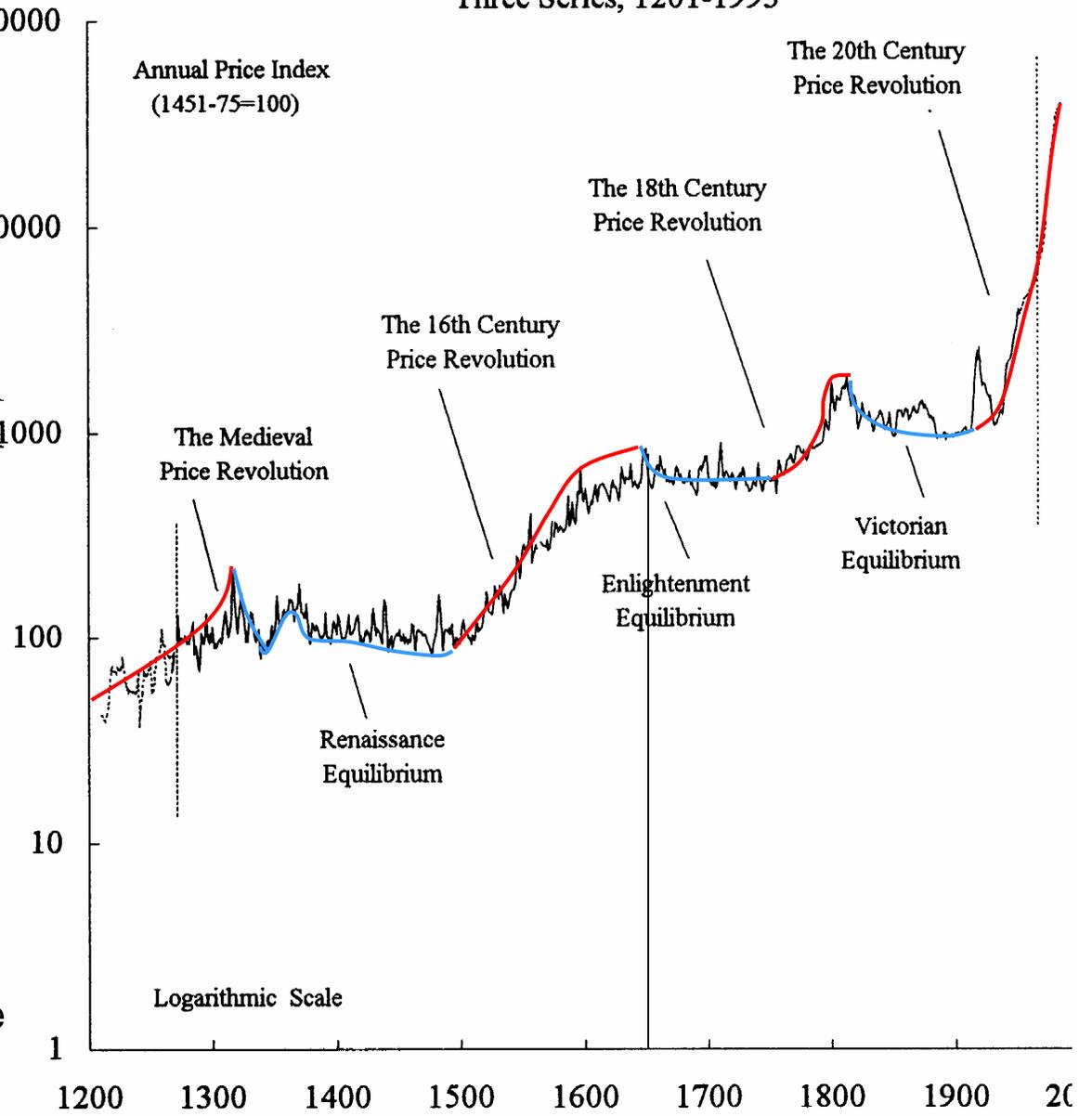
- *a sense of things no longer being on the right track*
- *economic polarization*
- *intolerant or missionary religion*
- *the rise of finance (displacing industry)*
- *military or imperial overreach*
- *excessive debt*

Fractal sand supply

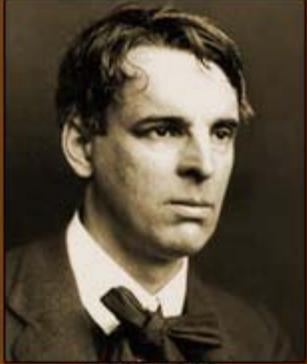


The Price of Consumables in England

Three Series, 1201-1993



William Butler Yeats



1865-1939
online-literature.com

William Butler Yeats "The Second Coming"

TURNING and turning in the widening gyre

The falcon cannot hear the falconer;

Things fall apart; the centre cannot hold;

Mere anarchy is loosed upon the world,

*The blood-dimmed tide is loosed, and
everywhere*

The ceremony of innocence is drowned;

The best lack all conviction, while the worst

Are full of passionate intensity.