

## **“The Two Movements in Economic Thought, 1700–2000: Empty Economic Boxes Revisited”**

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My theme is of a Rise and a Fall of understanding, arising from a failure to measure one’s understanding.

Down to 1848 the new field of political economy was gradually coming to understand the system of market-tested betterment (lamentably called by its enemies “capitalism”). After 1848, however, more and more of the economists, as they increasingly called themselves, came gradually to *misunderstand* it. Indeed, the political left and the middle came to treat the theories of market-tested betterment with angry contempt, such as Thorstein Veblen’s blast against English economics, with its allegedly necessary assumption of the “hedonistic conception of man . . . of a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli.”<sup>2</sup> “Imperfections” in the market took center stage in economics, and the understanding that had developed during the Rise was at best forgotten, or at worst condemned as “capitalist” propaganda, so obviously false that no actual evidence for its falsity needed to be offered.

The trouble we have had with the Fall after 1848 is that seldom or never have the alleged imperfections in market-tested betterment been subject to measurement. That is my main point: that the Fall has not been justified scientifically. From the point of view of the sciences that depend on measurement, such as geology or history, the course of economic science is strange indeed.

The crux in the sad story of a retreat from understanding after 1848 was an ill-chosen piece of rhetoric, the locution “*perfect* competition.” “Perfect” competition came to be seen by the left and then by the center as a unicorn. Economists found more and more theoretical reasons, they thought, to doubt that such a beast existed, even approximately. The history of economics can therefore be divided into two parts. Before 1848 was the education, stretching slowly from Aristotle, accelerating in the late 18<sup>th</sup> century and especially in the early 19<sup>th</sup>. After 1848 was the re-education (or some would say, as I would, the “de-education”).

Joseph Persky’s splendid new book, *The Political Economy of Progress: John Stuart Mill and Modern Radicalism* (2016) details the turning point with Mill’s *Principles of Political Economy* (1<sup>st</sup>

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<sup>2</sup> Veblen 1998, p. PPP.

ed. 1848). Persky argues that Mill embodies the triumph of laissez faire and also the beginning of theoretical criticisms of it. Persky celebrates the criticisms, whereas I think most of them have been factually mistaken. Like another colleague of mine at the University of Illinois at Chicago who studies such matters, the philosopher Samuel Fleischacker writing on the Blessed Smith, Persky writing on the Amiable Mill claims his man for the left. They are right. Smith was an original egalitarian, advocating what he called “the liberal plan of equality, liberty and justice.” Mill was an original liberal, advocating laissez faire. But he was also an original socialist, advocating intervention. Mill was simultaneously the peak of the Rise of laissez faire and the beginning of its long Fall.

**Existence Theorems are Humanistic,  
Necessary for *Una Economia Politica*  
But Not Sufficient**

The simplest form of the unicorn criticism after 1848 is to note with a smirk that in the world after the Garden of Eden no “perfection” can exist. Note the word “exist.” The form of argument, heard daily by those on both sides of the question of whether or not we live in a tolerably good world, depends on a humanistic, pure-mathematics notion of exist/not. Economists think they are doing science when they produce another *possible* failure of trade-tested betterment to achieve utopia *yet do not offer evidence on its factual importance*. The exist/not routine even infects statistical studies, which depend massively on a meaningless notion of statistical “significance,” yes or no—a notion that has recently been repudiated by the American Statistical Association.<sup>3</sup>

The problem is not the use in economics of mathematics, or of statistical theory. Most economists and I agree with Léon Walras, who wrote in 1900, “As for those economists who do not know any mathematics. . . yet have taken the stand that mathematics cannot possibly serve to elucidate economic principles, let them go their way repeating that ‘human liberty will *never* allow itself to be cast into equations’ or that ‘mathematics ignores frictions which are *everything* in social science.’”<sup>4</sup>

The problem is the *kind* of mathematics used, arising from the kind of teachers of mathematics the young economists apply to. Most economists learn their mathematics from the Department of Mathematics, not from the Departments of Engineering or of Physics or of Meteorology. Therefore they learn to prove mathematical propositions, rather than to use mathematical expressions as tools for studying the world (whether or not the expressions have been proven back in the Department of Mathematics to the standard of a Greek-style proof of existence). To get into a leading graduate program in economics these days you need to master “real” analysis, focusing on the proofs beloved by mathematicians of exist/not. The economist so educated is tempted to stay in the world of exist/not, and to eschew the world of large/small required of a political economy. She believes, mistakenly (as the physicists could tell her), that in building a bridge you need to prove theorems. She believes that a mathematical expression

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<sup>3</sup> cite

<sup>4</sup> Walras 1874/1900 [1954], p. 47.

is of no use if you can't arrange a mathematics-department proof of its consistency with axioms. She believes that you need a proof of the stability of solar system, or of the economy, before you can propose mathematical expressions for its movements. She believe that calculus must of course be proven (by real analysis) before you can use it to build a bridge, even though It was used for such purposes for a century and a half before the proofs were first devised. She believes, when she turns to what she thinks is an empirical method, that whether a coefficient in a regression equation "is positive" is a scientific question.

Alan Turing, a great British mathematician, had in 1939 a famous debate with Ludwig Wittgenstein, a great Austrian philosopher trained as an aeronautical engineer. It was great against great, but from two different worlds of mathematical learning.

*Wittgenstein:* The question is: Why are people afraid of contradiction? It is easy to understand why they should be afraid of contradictions in orders, descriptions, etc. *outside* mathematics. . . . Why should they be afraid of contradictions inside mathematics? Turing says, "Because something may go wrong with the application [of the mathematics]" . . . But if something does go wrong. . . then your mistake was of the kind of using as wrong natural law.

*Turing:* You cannot be confident about applying your calculus until you know that there is no hidden contradiction. . . .

*Wittgenstein:* But nothing has ever gone wrong that way yet.<sup>5</sup>

The economists, in a bridge-building science of policy, should be on Wittgenstein's side, using mathematics. They are too often on Turing's, proving it.

My point, that is, is not anti-mathematical. We need more, not less, mathematics in economics. But what we need is the mathematics relevant to the actual economic world, such as Fourier series and general equilibrium simulations and fuzzy logic. Not their proofs. If you prove that on such-and-such axioms "there exists" a competitive equilibrium you have proved nothing of scientific value.

Nor is my point, to turn it around, anti-humanistic. The humanities, such as literary criticism in the Department of Literature and number theory in the Department of Mathematics and human meaning in the Department of Theology, study categories, such as good/bad, lyric/epic, 12-tone/melodic, red giant/white dwarf, hominid/Homo sapiens, prime/not, exist/not. Such humanistic and human categorization, I affirm, is a necessary initial step in a scientific argument. You have to know what your categories *are* by well-considered definition, such as Homo sapiens sapiens/Homo sapiens neanderthalensis, before you can *count* their members by amount. Some definitions are helpful and wise, some misleading and stupid. The humanities and the humanistic step in any science do study such questions, offering more or less sensible arguments for a category being wise or stupid. In 1910, for example, many economist believed that the category "northern European race" was important in thinking about the economy. It was stupid, though most scientists at the time thought it was not.

The necessity of the humanistic first step, observe, applies to physical and biological sciences as much as to *les sciences humaines* or *die Geisteswissenschaften* or plain Italian *scienza*. Meaning is scientific. The Danish physicist Niels Bohr wrote in 1927, that "It is wrong to think that the task of physics is to find out how nature is. Physics concerns what we can *say* about

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<sup>5</sup> Quoted in Hodges 1983, p. 154

nature.”<sup>6</sup> We. Say. With words. About *geisteswissenschaftliche* categories the German poet Rose Äuslander wrote, “In the beginning/ was the word/and the word was with God/ And God gave us the word/ and we lived in the word./ And the word is our dream/ and the dream is our life.”<sup>7</sup> Truer words were never spoken. We dream of categories, in our metaphors and stories, and with them make our lives, especially our scientific lives. There is nothing scary or crazy or post-modern about such an idea. The “hardest” sciences rely on human categories.

Yet if you are making a quantitative point, as ought to happen in a policy science like economics, then after the necessary humanistic step you have to proceed to the actual count. The unicorn argument against the market by contrast depends on a common-sense piece of non-sense that after all in this vale of tears no perfect thing can exist. As Kant, the theorist of perfection, said, “Out of the crooked timber of humanity, no straight thing was made.” We know such a proposition a priori. Imperfection by such a non-quantitative standard is not, as Kant also put it, a “synthetic” (that is, empirical) statement. And so, says the left (the right is often no better at such evidence-free logic), “perfect” competition cannot *exist*. And so capitalism fails. It is being said to fail categorically, in Kantian terms by a “synthetic a priori.” An opening gambit ends the chess game in three moves. Queen’s Gambit Declined. Concede.

It is a silly argument, though heard on all sides. On the right, von Mises and Hayek and some of their followers argue without measurement that a *perfect* central plan cannot *exist*, and therefore socialism is impossible/impractical/evil. On the left, Samuelson and Stiglitz and some of their followers argue without measurement that a *perfect* market cannot *exist* and therefore government intervention is desirable/necessary/good. Notice: I am being fair in the accusation of silliness.

The silliness has indeed been a persistent feature of economics since Athens or Salamanca or Edinburgh or Cambridge, England or Cambridge, Massachusetts or Chicago, Illinois. It substitutes an existence theorem for a quantitative judgment, substituting blackboard economics for factual inquiry. No need to measure. Decide on humanistic grounds that the actual economy falls into this or that qualitative category – the labor-excess category or the irrationality-of-consumers category – and then go home.

Yet a quantitative judgment needs, of course, a measurement. The policy question is *how far* central planning or existing markets deviate from a pretty good result. (The “pretty good” locution comes from the political scientist John Mueller’s important book of 1999, *Capitalism, Democracy, and Ralph’s Pretty Good Grocery*. He argues that “pretty good” is all we can hope for. We better not attempt utopia, considering how far from pretty good the recent attempts at utopia have ranged, from theocracies in Geneva and Iran to socialism in New Harmony, Indiana and Stalinist Russia.)

I myself would judge that central planning, or even its socialism-lite version of heavy regulation as in Italy or the USA, have on the whole in their 20<sup>th</sup>-century attempts been bad for the wretched of the earth, such as in China under Mao or India under the License Raj, and that if we want to actually help the poor then *laissez faire* is a better choice. But anyway such a judgment is factual and quantitative, not humanistic and categorical – even though the

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<sup>6</sup> Bohr 1927

<sup>7</sup> *Am Anfang/war das Wort/und das Wort/war bei Gott/Und Gott gab uns das Wort/und wir wohnten/ im Wort/ Und das Wort ist unser Traum/ und der Traum ist unser Leben.*

humanistic and categorical step, I repeat, is necessary to start with. I myself judge *quantitatively* that the experience of East Germany compared with West Germany, say, shows that thorough central planning leads to incomes half or less of what can be attained in a more *laissez-faire* economy; or that the same is shown by Hong Kong vs. what we used to call Red China. The categories by themselves don't settle the issue. In some possible worlds, socialism *could* "work." That it doesn't work in our world is an empirical fact, not a qualitative matter.

You may disagree on the quantitative judgment. You may argue for example in the style of Duhem's Dilemma that I have not properly controlled the experiments (though note again that I am critical about my *a priori* friends on the right as much as about my *a priori* friends on the left). But the point remains that when we talk of measurement we have at least initiated a liberal discussion among friends, with some chance of eventual resolution. If we stay with the blackboard economics of exist/not we will argue endlessly and increasingly angrily about what kind of unicorn we scorn, blue or red. The left says that a perfect market is the unicorn, a mythical beast. The right says that on the contrary a perfect government is the unicorn, equally mythical. More likely, we will merely stop listening to to the other side, and never get to a reasoned, quantitative agreement about policy. *Audite et alteram partem* was inscribed on the door of many a medieval city hall. "Listen even to the other side" is a good motto for science, too.

The humanities I repeat one more time *are* necessary for a policy science: What is the definition of "externalities"? What is the criterion for the good functioning of a market? Have we chosen the accounting categories comprehensively? But categories are the beginning of a policy discussion, not the end. Too many economists think they are the end.

The economic historian John H. Clapham made such a complaint in 1922 when the theorists were proposing on the basis of a diagram or two that government should subsidize allegedly increasing returns industries. The economists didn't say how to attain the knowledge how to do it, or how *much* their non-quantitative advice would actually help an imperfect government to get closer to the perfect society, if starting from a pretty good, or pretty bad, actual society. Clapham wrote with irritation that the silence was discouraging to "the student not of categories but of things." (The "categories" are the humanistic steps in a science; "things" are the next steps, a history with measurement.) He chided A. C. Pigou in particular. One looks, Clapham wrote, into "*The Economics of Welfare* to find that, in nearly a thousand pages, there is not even one illustration of what industries are in which boxes [that is, in which theoretical categories], though many an argument begins, 'when conditions of diminishing returns prevail' or 'when conditions of increasing returns prevail,' as if everyone knew when that was." Clapham ventriloquized the reply of the theorist imagining without quantitative oomph "those empty economic boxes," a reply heard still, with no improvement during the intervening 90 years in its plausibility: "If those who know the facts cannot do the fitting, we [theorists finding grave faults in the economy so easily remedied by our policy proposals] shall regret it. But our doctrine will retain its logical and, may we add, its pedagogic value. And then you know it goes so prettily into graphs and equations."<sup>8</sup>

Long ago I expressed the problem with exist/not in a theorem, one that seems to fit the history of economic disputes since the beginning. I called it the "A-Prime, C-Prime Theorem,"

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<sup>8</sup> Clapham 1922, pp. 311, 305, 312.

as follows:<sup>9</sup> Suppose a set of assumption *A* characterizing the economy implies a set of conclusions about policy, *C*. With such and such general (or not so general, but anyway non-quantitative) assumptions *A* there exists, implied by *A*, a state of the imagined world, the goodness of *C*. A typical statement in economic theory is, “if information is symmetric, an equilibrium of the game exists” or, “if people are rational in their expectations in the following sense, buzz, buzz, buzz, then there exists an equilibrium of the economy in which government policy is useless.”

Now imagine an *alternative* set of assumptions about the economy, *A'*. It is what happened in the transition from rational-expectations to neo-Keynesian macroeconomics, for example, or from competitive, free-entry to monopolistic microeconomics. Naturally, if you change assumptions – introducing households that do not operate on lightning calculation, say; or making information a little asymmetric; or introducing any Second Best, such as monopoly or taxation; or admitting nonconvexities in production, those increasing returns industries – in general the conclusion is going to change.

Of course. There’s nothing profound or surprising about it. Changing your assumptions changes your conclusions. Call the new conclusion *C'*. So we now have the old “*A* implies *C*” and the fresh, publishable novelty, “*A'* implies *C'*.” We can add *another* prime and, as the mathematicians express it, proceed as before, introducing some other possibility for the assumptions, *A''*, which implies its own *C''*. And so forth: “*A'''* implies *C'''*.” And on and on and on and on, until the economists get tired and again go home. Any economist who has lived through the rise and fall of abstract general-equilibrium theorizing or of activity-analysis theorizing or rational-expectations theorizing or neo-institutional theorizing (I offer a prediction for that last one), knows that *A*-prime, *C*-prime goes nowhere scientifically.

Theorem: For each and every *A* mapping into *C* there exists an *A'* or *A''* mapping into *C'* or *C''* or whatever, disjoint with *C*. Proof: I leave it as an exercise for the reader.□

What has been gained? The *A*-Prime, *C*-Prime theorem is a reasonable description of how economic argument proceeds when not tested, as it never is if one stays with tests of statistical significance (to speak of a bankrupt method), or in any case if one does take the quantitative step and finds out magnitudes. It pure thinking – philosophy or theology or pure mathematics, excellent fields of study but none sufficient for a policy science. It is not disciplined by any serious inquiry into How Much, which might involve serious simulations or other ways of facing up to the question How Big is Big. It’s qualitative, not quantitative, and not organized to allow actual quantities into the story.

### **The List of “Existing” Imperfections is Very Long, But Unmeasured**

I claimed earlier that the Rise and Fall of liberalism is a useful framework for the history of economics. Now I am claiming, by way of justifying the first claim, that an error of scientific method, which we can study in the history of the rhetoric of economics, has caused the Fall.

Since the founding geniuses of Classical economics, a trade-tested betterment (a locution to be preferred to “capitalism,” with its erroneous implication that capital accumulation, not innovation, is what made us better off) has enormously enriched large parts of a humanity, now seven times larger in population than in 1800, and bids fair in the next fifty years or so to enrich

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<sup>9</sup> McCloskey 1989.

everyone on the planet. Look at China and India (and stop saying, “But not *everyone* there has become rich”; they will, as the European history shows, at any rate by the ethically relevant standard of basic comforts denied to most people in England and France before 1800, or in China before its new beginning in 1978 and India’s before 1991). And yet the left in its worrying routinely forgets this most important secular event since the invention of agriculture – the Great Enrichment of the last two centuries – and goes on worrying and worrying about imperfections, in a new version every half generation or so.

Here is a partial list of the worrying pessimisms (I invite suggestions), which each has had its day of fashion since the time, as the historian of economic thought Anthony Waterman put it, “Malthus’ first [1798] *Essay* made land scarcity central. And so began a century-long mutation of ‘political economy,’ the optimistic science of wealth, to ‘economics,’ the pessimistic science of scarcity.”<sup>10</sup>

1. Malthus worried that workers would proliferate and
2. Ricardo worried that the owners of land would engorge the national product.
3. Marx worried, or celebrated, depending on how one views historical materialism, that owners of capital would at least make a brave attempt to engorge it.
4. Mill worried, or celebrated, depending on how one views the sick hurry of modern life, that the stationary state was around the corner. Then the economists, many on the left but some also on the right, in quick succession 1848 to the present – at the same time that trade-tested betterment was driving real wages up and up and up by a factor of anywhere from 30 to 100, 3,000 to 10,000 percent – commenced worrying about, to name a few of the grounds for imperfections and pessimisms they discerned concerning “capitalism”:
  5. greed (offensive to Christians)
  6. alienation (as in the Young Marx)
  7. the uneducated taste of the workers in consumption
  8. the drinking habits of the workers (thus Knut Wicksell; Irving Fisher)
  9. infant industries (List in Germany, Carey in the United States)
  10. national histories of economies, as against “English” economics (the German Historical School)
  11. lack of bargaining strength by the workers
  12. racial impurity
  13. women working
  14. immigration of lesser breeds
  15. the race to the bottom in wages and the eugenic solution (advocated by most of the American economics profession c. 1900)
  16. neoclassical theory being insufficiently evolutionary (Veblen; Alchian)
  17. monopoly and the trusts (see Hovenkamp’s article on “the first law and economics movement”)
  18. imperialism, the last stage of capitalism (Lenin; Hobson)

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<sup>10</sup> Waterman 2012, p. 425. I have slightly modified the punctuation.

19. imperialism as robbery
20. adulterated food if no regulation
21. Veblen effects: demand curve slopes up
22. unemployment (a new word with Beveridge's book of 1909)
23. lack of coordination (rationalization in the 1920s)
24. the government is wise and good, unlike self-interested markets
25. business cycles (eventually Schumpeter; Hayek; Keynes)
26. underinvestment in increasing-returns industries (as Pigou argued)
27. externalities
28. under-consumption (dating back to Malthus and the general glut; then Keynes; now the neo-Keynesians)
29. monopolistic competition
30. separation of ownership from control (Berle and Means)
31. lack of planning (vs. Mises)
32. the economy is embedded in society (Karl Polanyi)
33. price-fixing markets are only recent, and optional (Karl Polanyi; vs. Michael Polanyi)
34. post-War stagnationism (Keynes, Hansen)
35. investment spillovers
36. unbalanced growth (Hirschman; French indicative planning)
37. capital insufficiency (Harrod/Domar/Solow models; William Easterly on "capital fundamentalism")
38. businesspeople do not price by marginal cost or marginal revenue, but by average plus markups
39. predatory pricing leads to monopoly
40. few competitors in an "industry" leads away from price = marginal cost
41. absence of entrepreneurs in certain cultures
42. dual labor markets (W. Arthur Lewis)
43. cost-push inflation (Otto Eckstein)
44. capital-market imperfections
45. peasant irrationality (vs. Theodore Schultz)
46. cultural irrationality
47. economic behavior has motives beyond self-interest
48. low-level traps, cycle of poverty (W. Arthur Lewis)
49. prisoner's dilemma (and much later Elinor Ostrom's reply)
50. failure to define property rights (Alchian, Demsetz, Coase: one of a few, like those immediately following here, from the political right)
51. overfishing (H. Scott Gordon [195X] and Anthony Scott [1955])
52. tragedy of the commons (Garrett Hardin)
53. over-population (Hardin's motive)
54. transaction costs (Coase)
55. public goods cannot be supplied privately (Samuelson; vs. Coase, Demsetz)
56. public choice (Buchanan, Tullock)
57. regulatory capture (ICC case Gabriel Kolko; Stigler)



58. free riding (Mancur Olson)
59. missing markets (George Akerlof; Joseph Stiglitz)
60. the Cambridge capital controversy and the undefinability of capital (Piero Sraffa; Joan Robinson; Geoffrey Harcourt; see above, Ricardo)
61. informational asymmetry (Akerlof)
62. unions as good monopolies (H. Gregg Lewis tested it 1955-1980)
63. third-world exploitation (see above, imperialism)
64. advertising (Galbraith)
65. public underinvestment (Galbraith)
66. fine tuning of the economy can work
67. large scale econometric models are the way forward
68. the invisible hand is mere magic unless proven mathematically
69. the conditions sufficient in logic for invisible-hand results are unreasonable (Hahn; Arrow; Debreu)
70. false trades out of equilibrium make it impossible to conclude that supply = demand is optimal
71. any imperfection throws economic analysis into a hopeless world of second-best
72. all policy arguments, such as the effect of minimum wages, must be expressed in general equilibrium, or else they are inconclusive
73. most economic propositions, such as downward sloping demand curves, are only provable econometrically
74. most econometric results have serious flaws
75. history is irrelevant: what matters is the future
76. history is decisive: what matters is the past
77. middle-income trap
78. path dependency (Paul David)
79. the economy is a complex system, with chaos and catastrophe
80. worker cooperatives are always better than corporations, but are lamentably rare
81. lack of international competitiveness
82. consumerism (see above, bad taste of workers)
83. consumption externalities (Robert Frank)
84. unemployment and inefficiency results from menu costs in the product market (neo-Keynesian neoclassicism)
85. knowledge has zero opportunity cost, but is expensive to produce (Paul Romer)
86. irrationality (behavioral economics)
87. irrational entrepreneurs (Schumpeter; Keynes; Akerlof and Schiller)
88. hyperbolic discounting
89. too big to fail
90. environmental degradation
91. underpaying of care workers (Nancy Folbre)
92. GDP is a poor indicator of anything important

93. prices are influenced by an unjust distribution of income, and therefore are irrelevant to policy for a just society
94. profit is against people; profit vs. social well-being
95. overpayment of CEOs
96. artificially high wages cause labor-saving innovation (Kaldor; Habakkuk; Allen; Robert Reich)
97. the government has innovated most (Mazzucatto)
98. any imperfection – orphan drugs, for example – shows that capitalism is bad on balance, even if the imperfection is caused by government
99. neo-liberalism has impoverished people worldwide
100. neo-stagnationism (Tyler Cowen; Robert Gordon 2016 )
101. rising inequality in future (Thomas Piketty)

Thomas Piketty's book *Capital in Twenty-First Century* worrying that the rich might some day get richer expresses only the latest of the leftish worries about "capitalism." One can line up the later items in the list, and some of the earlier ones revived à la Piketty or Krugman, with particular Nobel Memorial Prizes in Economic Science. I will not name the men (all men, in sharp contrast to the method of Elinor Ostrom, Nobel 2009), but can reveal here the formula. First, discover or rediscover a necessary or sufficient condition for *perfect* competition or a *perfect* world (in Piketty's case, for example, a more perfect equality of income). Then assert without evidence (here Piketty does better than the usual practice) and with suitable mathematical ornamentation (thus Jean Tirole, Nobel 2014) that the condition might be imperfectly realized or the world might not develop in a perfect way. Then conclude with a flourish (here however Piketty joins the usual low scientific standard) that "capitalism" is doomed unless experts intervene with a sweet use of the monopoly of violence in government to implement anti-trust against malefactors of great wealth, or subsidies to diminishing-returns industries, or foreign aid to perfectly honest governments, or money for obviously infant industries, or the nudging of sadly childlike consumers or, Piketty says, a tax miraculously arranged on inequality-causing capital worldwide.

A central feature of this history of imperfection-finding, and the proposed statist corrections, is that almost never does the economic thinker feel it necessary to offer evidence that his (mostly "his," I repeat) proposed state intervention will work as it is supposed to, and almost never does he feel it necessary to offer evidence that the imperfectly attained necessary or sufficient condition for perfection before intervention is large enough in the actual world that its imperfect fulfillment reduces by much the performance of the economy in aggregate.

By a figure of rhetorical called by the Romans *copia*, the sheer number of the briefly fashionable but never measured "imperfections" has taught young economists to believe that trade-tested betterment has worked disgracefully badly – even though all the quantitative instruments agree that it has worked since 1800 spectacularly well. The youngsters innocently suppose that their elders *must* have found some actual facts behind the lovely graphs and equations. The youngsters become huffy and scornful when some doltish economic historian such as Clapham or McCloskey asks for actual scientific evidence.

A rare exception to the record of not checking out what oomph an alleged imperfection might have was the book of 1966 by the Marxists Paul Baran and Paul Sweezy, *Monopoly Capital*,

which actually tried (and honorably failed) to measure the extent of monopoly overall in the American economy.<sup>11</sup> For most of the other worries on the list – such as that externalities obviously require government intervention (as have declared in historical succession Pigou, Samuelson, and Stiglitz) – the economists have supposed that the economy, for this or that reason in the list, is horribly malfunctioning and obviously needs immediate, massive intervention from government, advised by wise heads such as Pigou, Samuelson, and Stiglitz. They have not felt it worth their scientific time to show that the malfunctioning matters much in aggregate.

By contrast, economists on the right such as Arnold Harberger and Gordon Tullock and H. Gregg Lewis claiming that the economy works pretty well have sometimes done the factual inquiry, or have at least suggested now it might be done.<sup>12</sup> The performance of Pigou, Samuelson, Stiglitz, and the rest on the left (admittedly in these three cases a pretty moderate “left”) would be as though an astronomer proposed on some qualitative assumptions that the hydrogen in the sun would run out very, very soon, requiring urgent intervention by the Galactic Empire, but didn’t bother to find out with serious observations and quantitative simulations *roughly how soon* the sad event was going to happen. An instance is Robert Solow’s influential assertion that saving rates do not affect the steady state growth rate. Down to the present the growth theorists conjure with the steady state, despite the calculation made soon after Solow by a Japanese economist named Sato, that to get back to 90 percent of the steady state after a disturbance would take about a century. Mostly in economic theory it has sufficed to show the mere *direction* of an “imperfection” on a blackboard – Samuelson’s “qualitative theorems” so disastrously recommended in *Foundation* – and then await the telephone call from the Swedish Academy quite early on an October morning.

One begins to suspect that the typical leftist – most of the graver worries have come from thereabouts, naturally enough, though perhaps not so very naturally considering the great payoff of “capitalism” for the working class – starts with a root conviction that trade-tested betterment is seriously defective. The conviction is acquired at age 16 years when the proto-leftist discovers poverty but has no intellectual tools to understand its source. I myself followed such a pattern, and therefore became for a time a Joan-Baez socialist, singing socialist songs to guitar accompaniment. Then the lifelong “good social democrat,” as he describes himself (and as I for a while described myself), when he has started to become a professional economist, and now in order to support the deep-rooted conviction, innocently acquired, looks around for any *qualitative* indication that in some imagined world the conviction would be true, without bothering to find numbers drawn from our own world. It is the utopianism of good-hearted leftward folk who say, “Surely this wretched society, in which some people are richer and more powerful than others, can be greatly improved. We can do *so much*, much better!” The utopianism springs from the logic of stage theories, conceived in the eighteenth century as a tool with which to fight traditional society, as in *The Wealth of Nations*, among lesser books. Surely, they say indignantly, history is not finished. *Excelsior!*

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<sup>11</sup> Baran and Sweezy 1966. It is significant that Sweezy’s prize-winning Ph.D. thesis in the Harvard Economic Series (194NNN) was on the economic history of the English coal trade.

<sup>12</sup> Harberger 1954; Tullock 1967; H. Gregg Lewis

True, the right can be accused of utopianism as well, having its own adolescent air, when it asserts without evidence that we live already in the best of all possible worlds, as do some of the older-model Austrian economists, and as do some of the Chicago School who have lost their taste for engaging in serious testing of their truths. Yet admitting that there is a good deal of blame to spread around in economics to yield a policy science merely philosophical, and not quantitative, the leftward refusal to quantify about the system as a whole seems to me more prevalent and more dangerous.

I have a beloved and extremely intelligent Marxist friend who says to me, "I hate markets!" I reply, "But Jack, you delight in searching for antiques *in markets*." "I don't care. I hate markets!" The Marxists in particular have worried in sequence that the typical European worker would be immiserized, for which they had little evidence, then that he would be alienated, for which they had little evidence, then that in the periphery the Third-World-worker would be exploited to benefit the worker in the core, for which they had little evidence. Recently the Marxists and the rest of the left have commenced worrying about the environment, on what the late Eric Hobsbawm called with a certain distaste natural in an old Marxist "a much more middle-class basis."<sup>13</sup> We await their evidence, and their proposals for what to do about it, other than having us all return to Walden Pond and the life of 1845, or having us commit mass suicide.

Long ago I had a nightmare. I am not much subject to them, and this one was vivid, an economist's nightmare, a Samuelsonian one. What if *every single* action, I dreamt, had to be performed exactly optimally? Maximize Utility subject to Constraints. Max  $U$  s.t.  $C$ . Precisely. Suppose, in other words, that you had to reach the *exact* peak of the hill of happiness subject to constraints with *every single* reaching for the coffee cup or *every single* step in the street. You would of course fail in the assignment repeatedly, frozen in fear of the slightest deviation from optimality. In the irrational way of nightmares, it was a chilling vision of what economists call rationality. A recognition of the impossibility of exact perfection lay behind, of course, Herbert Simon's satisficing, Ronald Coase's transaction costs, George Shackle's and Israel Kirzner's reaffirmation of the baseball player and coach Yogi Berra's wisdom: It's hard to predict, especially about the future.<sup>14</sup>

We young American economists and social engineers in the 1960s, innocent as babes, were sure we could attain predictable perfection. "Fine tuning" we called it. It failed, as perfection must. The political scientist I have mentioned, John Mueller, in his 1999 book made the point that we should be seeking instead merely the "pretty good" – which would require some fact-based estimate that we are not too terribly far from optimality in, say, Garrison Keillor's imagined Lake Wobegon, Minnesota, in which Ralph's Pretty Good Grocery is in its advertising comically modest and Scandinavian ("If you can't find it at Ralph's, you probably don't need it").<sup>15</sup> Mueller reckons that capitalism and democracy as they actually, imperfectly are in places like Europe or its offshoots are pretty good. Or might be: we don't know until we've made the factual estimate. The "failures" to reach perfection in, say, the behavior of Congress or the equality of the U.S. distribution of income, Mueller and I reckon, are probably

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<sup>13</sup> Hobsbawm 2011, p. 416.

<sup>14</sup> cites

<sup>15</sup> Mueller 1999.

not large enough to matter all that much to the performance of the polity or the economy. They are good enough for Lake Wobegon. Driving across town to buy instead at the Exact Perfection Store, staffed by economic theorists specialized in finding failures in the economy without measuring them, often leads to consequences you probably don't need.

### **Piketty, for Example, Does Not Grasp the Response of Supply to Scarcity**

The result has been that young economists do not feel that they need to study the history of economic thought up to the level of grasping what the political economists of 1848, such as Claude Frédéric Bastiat (d. 1850), understood market-tested betterment to be. You will challenge me on the point. Surely economists who master Mas-Collel-Whinston-Green can handle anything that such primitives as Bastiat and Mill knew, or Marshall or Friedman.

Alas, no. Because of the abstraction of exist/not and The List of Imperfections, young economists, and many elderly ones, are not trained to understand. . . well . . . economics. They do not understand the wisdom of 1848, and therefore are ill-equipped to criticize it. A recent example is a passage on p. 6f of the English translation of Piketty's book. I gave the book a respectful and long review, concluding that it was a brave attempt, though ethically and conceptually and statistically flawed. But the early passage on p. 6, I must say, brought me up short, because it showed that Piketty does not grasp how markets are alleged to work according to the understanding of 1848, originating in Jules Dupuit, clear enough in Mill and Bastiat, and perfected later by Alfred Marshall and the rest. Not even close.

Piketty begins the passage by seeming to concede to his neoclassical opponents (he is a proud Classicist, Ricardo plus Marx). "To be sure, there exists in principle a quite simple economic mechanism that should restore equilibrium to the process [in this case the process of rising prices of oil or urban land, leading to a Ricardian Apocalypse of the rich suppliers of oil or land engorging the national product]: the mechanism of supply and demand. If the supply of any good is insufficient, and its price is too high, *then demand for that good should decrease, which would lead to a decline in its price.*"

The (English) words I italicize clearly mix up movement along a demand curve with movement of the entire curve, a first-term error at university. The correct analysis (we tell our first-year, first-term students by around week four) is that if the price is "too high" it is not the movement of the whole demand curve that "restores equilibrium" (though the high price in the short run does give people a reason to conserve on oil or urban land with smaller cars and smaller apartments, moving as they in fact do up along their otherwise stationary demand curves), but an eventually *outward-moving supply curve*. The supply curve moves out because entry is induced by the smell of super-normal profits, in the medium and long run (which is the Marshallian definition of the terms). New oil deposits are discovered, new refineries are built, new suburbs are settled, new high-rises that save urban land are constructed, as has in fact happened massively since, say, 1973, unless government has restricted oil exploitation (usually on environmental grounds) or the building of high-rises (usually on corrupt or idealistic grounds).

Piketty goes on—remember: it does not occur to him that a high price causes after a while the *supply* curve to move out; he thinks the high price will cause the demand *curve* to

move *in*, leading to “a decline in price” (of the scarce item, oil’s or urban land) – “such adjustments might be unpleasant or complicated.” To show his contempt for the ordinary working of the price system as he misunderstand it, and as political economists finally by 1848 had come to understand it, he imagines comically that “people should . . . take to traveling about by bicycle.” The substitutions along a given demand curve, or one now mysteriously moving *in*, without any supply response “might also take decades, during which landlords and oil well owners might well accumulate claims on the rest of the population” (now suddenly he has the demand curve moving *out*, for some reason faster than the supply curve moves out) “so extensive that they could they could easily [on grounds not argued] come to own everything that can be owned, including” in one more use of the comical alternative, “bicycles, once and for all.”

Having butchered the elementary analysis of entry and of substitute supplies, which after all is the economic history of the world, he speaks in heavy jest of “the emir of Qatar” as a future owner even of those bicycles, once and for all. The phrase must have been written before the recent and gigantic expansion of oil and gas exploitation in Canada and the United States. In short, he concludes triumphantly, having seen through the obvious silliness found among those rich-person friendly neoclassical economists, rather in the style of a bright first-year student in week three of elementary economics, “the interplay of supply and demand in no way rules out the possibility of a large and lasting divergence in the distribution of wealth linked to extreme changes in certain relative prices, . . . Ricardo’s scarcity principle.”<sup>16</sup>

Piketty the economist does not understand supply response. In keeping with his position as a man of the left, he has a vague and confused idea about how markets are supposed to work, and especially about how supply is supposed to respond to higher prices. One might offer the mild suggestion that, if he wants to offer pessimistic conclusions concerning “a market economy based on private property, if left to itself” (p. 571), he should learn what elementary economics, agreed to by all who have studied it enough to understand what it is saying, does in fact say how a market economy based on private property behaves if left to itself.

I was so startled by the passage that I went to the French original and called on my shamefully poor French to make sure it was not a mistranslation. A charitable reading might say at first that it was – very charitable indeed because after all the preparatory senselessness remains: “then demand [the whole demand curve?] for that good should decrease” (*alors la demande pour ce bien doit baisser*). Yet Piketty’s English is much better than my French – he taught for a couple of years at MIT, and speaks educated English when interviewed. If he let stand the senselessness in the translation by Arthur Goldhammer (a mathematics Ph.D. who has since 1979 done fully 75 translations of books from the French – though admittedly this is his first translation of technical economics), especially in such an important passage, one has to assume that Piketty thought it was fine economics, a penetrating – nay decisive – criticism of those silly native-English-or-now-German-speaking economists who think that supply curves move out in response to increased scarcity. (Yet I urge a bit of charity: she who has never left a little senselessness in her texts, and especially in translations out of her native tongue, is invited to cast the first stone.) In the French version one finds, instead of the obviously erroneous English, “which should lead to a decline in its price,” typical of the confused first-term student,

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<sup>16</sup> Piketty 2014, pp. 6-7.

the clause *qui permettra de calmer le jeu*, “which should permit some calming down,” or more literally, “which would permit some calming of the play [of, in this case, supply and demand].” *Calmer le jeu*, though, is in fact sometimes used in economic contexts in French to mean heading off a price bubble. And what “calming down” could mean in the passage other than an economics-and-common-sense-denying *fall* in price *without* a supply response having taken place is hard to see.

The rest of the passage does not support the charitable reading. The rest is uncontroversially translated, and spins out the notion Piketty evidently believes that supply responses do not figure in the story of supply and demand, which anyway would be unpleasant and complicated – so much more unpleasant and complicated than, say, the state taking a radically larger share of national income in taxes, with its attendant inefficiencies, or the state encouraging the spurning of capitalist ownership in favor of “new forms of governance and shared ownership intermediate between public and private” (p. 573), with its attendant corruptions and lack of skin in the game.

Piketty, it would seem, has not read with understanding the theory of supply and demand that he disparages, such as proposed in Smith (one sneering remark in his book on p. 9), Say (ditto, mentioned in a footnote with Smith as optimistic), Bastiat (no mention), Walras (no mention), Menger (no mention), Marshall (no mention), Mises (no mention), Hayek (one footnote citation on another matter), Friedman (pp. 548-549, but only on monetarism, not the price system). He is in short not qualified to sneer at self-regulated markets (for example on p. 572), because he has not the faintest ideas how they work, or at any rate how they are supposed to work in the usual expositions since 1848. It would be like someone attacking the theory of evolution (which is identical to the theory the economists use of entry and exit in self-regulating markets – the supply response being what inspired Darwin) without understanding natural selection or the the Galton-Watson process or modern genetics.

It is not his fault. He was educated in France. French-style teaching of economics, against which the insensitively-named Post-Autistic Economics (PAE) movement by students of economics in France was directed, is abstract and Cartesian, never deigning to study the ordinary price theory that one might use to understand the oil market, 1973 to the present.<sup>17</sup> In that market, because of supply responses – never considered in books by non-economists such as Paul Ehrlich’s *The Population Bomb* (1968) or by economists such as Piketty who do not understand elementary economics – the real price of oil, for example, since 1980 has fallen.

### **An example is that monopoly has dramatically fallen 1800 to the present, not risen**

What is to be done?

Answer: follow the scientific standard of physics or geology or history, and refrain from offering an imperfection in a market or a government, or in Markets and Governments in general, without an empirical showing that the alleged effect is quantitatively important.

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<sup>17</sup> On the other hand, the French economist Bernard Guerrien who inspired the movement has his own problems with elementary economics. McCloskey 2006b.

Let me give as an example the empty economic box of number 17 in the list of imperfections, the alleged prevalence and *increasing* prevalence of enterprise monopoly. Most economists, and more of the general public on the left of the political spectrum, believe that the power of monopolies has increased steadily since, say, 1800. The belief has inspired any number of further entries in the list of imperfections, such as adulterate food if not regulation of monopolies in meatpacking c. 1910, the lack of coordination (or the opportunity for it, thinking of syndicalism) during the 1920s, underinvestment in the sort of increasing returns industries that spawn natural monopoly, the monopolistic competition studied in the 1930s by my teacher Edward Chamberlain, the cost-push inflation from monopolized industries studied in the 1950s by another teacher of mine, Otto Eckstein, regulatory capture by the very monopolies, as my colleagues at Chicago argued in the 1970s, advertising and planned obsolescence à la Galbraith, too big to fail, overpayment of CEOs, and rising inequality. All of these imperfections and more have flourished for a decade or so in economics by assuming that monopoly grows and persists.

I will not repeat here the Chicago-School line – which I in fact pretty much believe – that the main source of actual monopoly (the post office, for example, or the ever-extending system of patents and copyrights, invented in *Serenissima* centuries ago) is the government, that is, political favors and protectionism. The Chicago-School claims that new entry – the supply response – without government protection is usually vigorous, and that a new Bill Gates is usually working in a new garage right now to overturn the old Bill Gates. The empirical evidence for the “usually” in the last sentence is on its face quite strong. After all, creative destruction (the phrase of Sombart’s that Schumpeter made his own) is precisely the entry that Piketty does not grasp, and that has made the Great Enrichment since 1800. Once upon a time many little local fortunes were based on a local monopoly of a department store. Now the department-store model, and the shopping malls that depended on it when the local chains merged, is fading, and with it the super-normal rents making fortunes. The fade is to our good.

Instead I will propose – but leave to future work to actually accomplish – a simpler empirical test. How many competing suppliers does the typical consumer face in 1800, and how many now, weighted by the importance of the item consumed in the budget? How many competing demanders did the typical worker face in 1800 for his services? I think it is obvious – I would like to hear why it is not – that the number of such suppliers or demanders has enormously increased since 1800, especially among a substantial margin of customers located between suppliers, and that therefore monopoly/monopsony has *decreased* dramatically since 1800, not increased. We are closer, factually speaking, to a pretty good competitive economy in 2016 than we were in 1800, or 1900, or 1950.

The central reason is of course falling transport costs. In 1800 even in a country quite rich (by the wretched standards of the time), such as Holland or England the average consumer of flour for her bread or of a builder for her hovel faced few suppliers. She could not get across town quickly to drive down the price differential between her local monopolist baker and the new entrant at Zeedyk. Her husband could not venture to the next town to find employment, and continued therefore to labor at low wages for the local chair-maker. It is a matter of transport/transaction costs.

In a wider field, getting out to the frontier, or at any rate escaping the low land/labor ratios of much of Europe, would cost many weeks of non-employment on a sailing ship and many months of saving out of paid employment at home to get the steerage passage. It is why



immigrants to the New World were richer than their countrymen stopping at home to starve. Europeans were well and truly stuck. They were less stuck than in the Middle Ages (there is a good case to be made that in 1800, and especially in the Middle Ages, people were even less stuck in China). But stuck they were, in part walled off from competitive offers to sell or buy in their locale.

I do not claim that trade did not occur across regions. On the contrary, even in a Europe riven by tariffs and mountains and guilds, there was sufficient competition across the margins of locales to bring prices of many goods and services and labor and capital close to each other by arbitrage. Arbitrage in wheat and labor improved from the Middle Ages to the Early Modern. It was one of Adam Smith's (few) unique analytic contributions to point this out, and to back it up, as he characteristically did, with canny factual observations.

But I do claim in olden days that inside the margin many consumers and employees had few options, and the suppliers or demanders they faced had an ability to set the terms of trade unfavorably to them. Monopoly. Monopsony.

And I further claim that a long, long series of innovations in transport and transaction costs radically reduced the ability of the monos to do so. Consider:

proliferating **turnpikes** in the 18<sup>th</sup> and early 19<sup>th</sup> centuries (as Daniel Klein has shown),

the rise of **private roads** (still prevalent in Sweden),

**metaled roads** between towns by McAdam

and **stage coaches** rushing along them,

**canal** transport (especially in Holland, as Jan de Vries has shown, but then also in Britain; and in the United States after the Erie Canal),

paving of **roads in town**,

**policing of roads** in town and out (highwaymen disappeared in Western Europe),

the **telegraph**, giving information on prices instantly,

and above all the **railway**, pushing into every village in England and every substantial town in the United States,

and the **steam ship**, connecting markets worldwide,

leading to **passenger liners**, and a sharp fall in trans-Atlantic fares,

the **street car**, first pulled by horses,

then by steam plants pulling **cable cars** (in the 1880s Chicago had the world's longest cable-car network),

then **electric trolleys**,

making the **department store** with its price-breaking "*bon marché*" (see Zola, *The Ladies' Paradise* [1883]),

and especially the **bicycle**, that object of Piketty's scorn, at first an expensive toy for gentlemen, eventually a monopoly- and monopsony-breaker for working people on **good urban roads**,

reliable **postal service** on the railways (my great grandfather sorted mail on the route into Chicago from Indianapolis),

and then the great **mail-order** firms, such as in the United States Montgomery Ward and Sears, Roebuck,

**subways**, first steam and then (1890 in London) electric,

the **telephone**, at first expensive then a ubiquitous aid for dealing and information,  
above all, the **automobile**, again at first a toy of the rich, but at length even the Joad family in Steinbeck's *The Grapes of Wrath* would flee starvation by auto,  
and the **motor truck**, cheapening delivery and competing eventually with the railways,  
the **Sears-Roebuck** regional stores after World War II,  
the **supermarket**, enabled by the automobile,  
the **commercial strip** outside every U.S. town, competing with downtowns,  
the **shopping mall**, with a department store anchor,  
**falling tariffs**, enforced by the WTO, making the world a single market in, say, automobiles,  
and eventually routine **air transport**,  
and especially the **internet**,  
then **Amazon.com** reinventing the mail-order and destroying the mall,

In other words, competition has increased very largely since 1800 or 1900, and the power of monopolies ("the corporations" the left says, with a shiver) has dramatically declined. During the 1950s Americans spoke of having "three and a half" suppliers of automobiles, namely, Ford, Chrysler, General Motors, and American Motors. Then tariffs on imported autos were slashed, with transitional episodes of quotas on Japanese autos to enrich auto workers at the cost of \$200,000 in higher prices to auto buyers for each Detroit job saved. Now American consumers face twenty or so suppliers of autos, such as Toyota, Volvo, and the rest. There is now more reason, not less, to expect trade-tested betterment to work as the political economists by 1848 had realized, leading to the Bourgeois Deal: Let the bourgeoisie try out betterments for profit, and in the long run it will enrich us all.

The scientific point here is that if monopoly is typical of the list of imperfections – and as said monopoly figures in many of the items – it is a feeble list. And there is reason to think the case against the significance of monopoly is not a singleton. Informational asymmetry such as George Akerlof's Lemons Problem is lessened by universal education, by autos for comparison shopping, by telephones ("Let your fingers do the walking" was the motto of the Yellow Pages in the U.S.), and now by Yelp and Uber and the like. That is, there is reason to think informational asymmetry is a *lessening* problem – noting that there has been no scientific showing that it is a *big* problem to begin with, speaking of the economy as a whole, and the closeness or not to a pretty good outcome.

In the list of imperfections again and again the showing is nil. Inequality has fallen, not risen. Imperialism was not profitable for the countries conquering others. Unemployment is caused as much by government intervention as by inherent flaws in market economies. Stagnationism has been asserted by every other generation of economists, to be refuted in the history of the next. Non-linear dynamics, though attractive to the engineering mind, cannot be shown to be typical of market economies. That consumers are irrational does not imply that markets are. The middle income trap confuses absolute with comparative advantage. If advertising had magical powers it would not be merely 2 percent of national income, most of it informative or aimed at experts. If free riding were insoluble we would have a war of all against all, and the life of man would be solitary, poor, nasty, brutish, and short.

Overpopulation did not happen. China and India broke out of the cycle of poverty. Inflation is everywhere and always a monetary phenomenon, and to think otherwise is to mistake relative for absolute prices. Capital accumulation has not been the cause of trade-tested betterment, but its consequence. Monopolistic competition assumes that suppliers do not acknowledge interaction when it is obvious that they should. Immigrants were not lesser breeds. The landlords did not engorge the national product, and monopoly capitalists were competed away by entry, as in falling transport costs.

The hunt for exist/not imperfections, in short, has been a mistake. We need to recover the attitude of 1848, using our superior abilities in measuring nowadays to get back to doing a policy science, as indeed economists are forced to do when they actually advise the prince. Such a science, I predict, will discover what the magnitude of the Great Enrichment suggests: that we've done amazingly well, and that a free-market economy left to its own devices works astonishingly well, especially in evoking trade-tested betterments that explain most of economic growth, despite a hundred or so grievous if unmeasured imperfections alleged by the economists.

Time to get back to serious science, after a century and a half playing in those empty economic boxes.

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