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Life Imitates Art:
How the Economy Came to Resemble the Model

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George Stigler (1976, p. 351) wrote in 1976 that "...economists exert a minor and scarcely detectable influence on the societies in which they live." I don't believe that is true any longer. In fact, I want to make--and then defend--an audacious claim that directly contradicts Stigler: Since he wrote those words, real-world economies, including ours, have changed in a number of ways that bring them into closer alignment with the pristine model envisioned by economic theory. In this curious sense, life has come to imitate art.

But this talk is not meant as a piece of boosterism for economic theory. The arguments of economists, persuasive as they may have been, were not necessarily the main reason for the changes in real economies. Nor were all these changes unambiguously for the better. Nor do I claim that every previous discrepancy between the real world and the model has been resolved in the model's favor. However, I do perceive a general pattern, and it is an ironic one. One might have assumed that economists would have to adjust their models to fit reality, rather than the other way around. That's certainly the way it works in the natural sciences. Germs did not change their behavior to accommodate Pasteur's theory, nor was Mercury's orbit perturbed so that Einstein wouldn't be. But economists appear to have bent reality (at least somewhat) to fit their models. That's quite a feat.

1. THE FALL OF SOCIALISM

I begin by mentioning the most obvious, and certainly the most important, change that falls under this rubric: the replacement of socialism by capitalism in almost all the formerly socialist countries. No other victory of the model is nearly so fundamental. But, because it is so obvious, I will not dwell on it--except to observe that received economic theory is a theory of capitalism, not of socialism.

It would be presumptuous to claim that economic theory played much of a role in ending the Cold War, but economic reality--specifically, the abject failure of the Soviet economic system--certainly did. In any case, the world economy clearly took a giant step closer to the economists' model.

2. THE TREND TOWARD PRIVATIZATION

In many ways, the choice between pure socialism and pure capitalism is much too stark. All real economies have always blended privately-owned and publicly-owned assets. The genuine public-private ownership issue is quantitative: Where shall society draw the line?

Standard economic theory tacitly views all assets except (I suppose) government buildings and genuine public goods as private property managed for the benefit of owners. This ownership arrangement is presumed to produce maximal efficiency. As Adam Smith put it in The Wealth of Nations:

In every great monarchy in Europe the sale of the crown lands would produce... a much greater revenue than any which those lands have ever afforded to the crown... When the crown lands had become private property, they would, in the course of a few years, become well improved and well cultivated.

Look at the real world, however, and you will see governments owning transportation systems, public utilities, and schools--to name just a few. But the line between public and private ownership has been moving perceptibly--more outside the United States than within it because we had so few publicly-owned assets to begin with. Even here, however, recent years have witnessed considerable privatization in the health-care industry and a bit in education. There is now even an intense debate over whether to privatize Social Security, which makes an interesting case in point.

Standard economic theory offers little justification for a government program that not only compels saving for retirement but regulates both its volume and form. Rational individuals should make such decisions for themselves; in dynamic optimization models, they do it all the time! So why is this seemingly-private function placed squarely in public hands? The main reasons, I believe, are "non-economic" in the sense that they are based on the belief that homo sapiens behave differently than homo economicus. In particular, real people are likely to be short-sighted and therefore to underprovide for their old age. Social Security forces them to do something (save for their retirement) that makes them better off. Listen to that sentence again: "Social Security forces

them to do something that makes them better off." That is not the normal perspective of economics, whose image of man is a rational, self-interested calculating machine. Thus, if Social Security is privatized, that will mark one more step back toward the pure economic model.

Has the recent interest in privatizing Social Security been driven by economists' ideas? I think it is fair to answer: yes. But it has also benefited mightily from the support of vested interests who envision large fees from millions of new accounts to manage. Adam Smith would have understood that, too.

3. MORE SINGLE-MINDED CONCENTRATION ON PROFIT MAXIMIZATION

In the model, of course, a capitalist controls the decisions of the firm and does so to maximize profits. In a multi-period context with risk, this translates into maximizing the expected discounted present value of profits. And if the stock market values future earnings streams properly, that in turn means maximizing the value of the company's stock. Hence, standard economic theory hypothesizes that businesses have only one goal: maximization of the company's stock market value.

My contention is that this stark assumption comes much closer to the mark today than it did a decade or two ago. In the United States these days, and increasingly in other countries, it is taken as axiomatic that management's job is to maximize "shareholder value"--to the near-exclusion of all other objectives.

It was not always thus. For decades, economists debated whether firms "really" maximized profits. For example, there was a spirited and well-known exchange in the 1946 American Economic Review between two Princeton economists of an earlier age: with Richard Lester (1946) using interview evidence to attack the assumption of profit maximization, and Fritz Machlup (1946) defending it.

Even when I began to study economics in the 1960s, considerable attention was still accorded to Baumol's (1957) sales maximization hypotheses, Simon's (1959) satisficing hypothesis, and other alternative goals of the firm. Why? Because they were viewed as more realistic descriptions of firm behavior than strict profit maximization. In brief, efforts were underway to push the economic model closer to what was perceived as reality.

But then things began to change. Jensen and Meckling, in their famous article on "agency costs," observed that managers who own only a small share of the stock have an incentive to

overindulge in perquisites at shareholders' expense. And they recommended debt-laden capital structures to mitigate such agency costs. A decade later, Jensen (1986) highlighted "free cash flow" as the feedstock of managerial slack and again advocated the heavy use of debt financing to limit managerial discretion.

At about the same time, things were changing rapidly on Wall Street and in corporate boardrooms all over America. The rise of institutional investors and, especially, the emergence of an active market for corporate control in the early 1980s, held managerial feet to the value-maximization fire as never before. These two devices for managerial discipline--debt financing and the threat of takeovers--were neatly combined in the leveraged-buyout craze that terrorized corporate America in the 1980s.

Not by coincidence, forms of managerial compensation changed dramatically in just the direction suggested by economic theory: To align the interests of owners and managers, executive compensation turned increasingly toward stock options. Jensen played a role in this development, too. An influential study with Kevin Murphy (1990) found that CEOs captured on average only about 0.003% of the increase in the value of the firm--which, to Jensen and Murphy (p. 138) meant that "corporate America pays its most important leaders like bureaucrats."

The remedy was simple and obvious: Managers could be relied upon to pursue value maximization more single-mindedly if their compensation was tied more tightly to the company's stock price. The resulting changes in compensation practices were revolutionary. In the mid 1980s, only about 2% of CEO pay came in the form of stock options; by 1998, this share was over 53%. Who today today would say that managers are paid "like bureaucrats"?

An interesting question is, once again: To what extent did intellectual developments drive, or at least heavily influence, these changes in real-world management attitudes and/or in the market for corporate control? Metaphorically, did Michael Jensen create Michael Milken? We may never know, but I am inclined to give considerable credit or blame to economic theory for influencing economic reality. The arguments of Jensen and others were persuasive. But self-interest didn't hurt, either.

4. VIEWING LABOR AS "JUST A COMMODITY"

In the academy, we have a special subdiscipline of economics called "labor economics." But there are no subjects called "equipment economics" or "ball-bearing economics." Why?

The major reason, I believe, is that many economists of earlier generations refused to accept the idea that the market for labor should be treated just like any other input market--with an upward-sloping supply curve, a downward-sloping demand curve, and equilibrium where the two curves cross. Instead, there was a long and deep institutional tradition in labor economics. And I think many economists grudgingly accepted the view that labor had to be treated differently from other factor inputs. It did not sit there passively as it was bought and sold to maximize profits. It talked, it complained, it had feelings, it formed unions, it went on strike!

While marginal productivity theory insists that labor is always paid its marginal revenue product, astute observers of labor markets thought they saw something different. Like what we would now call rent-sharing. Like long-term implicit contracts that granted workers something approaching (but not quite reaching) tenure. Like unions and collective bargaining. None of these institutional features of labor markets were inconsistent with economic theory, but each of them required modifications that bent the model closer to perceived reality.

But look what's happening in labor markets now. Unions are on the decline--down from 36% of American workers in 1945 to just 14% today. Slack is being squeezed out as firms strive more singlemindedly to maximize profits. Long-term relationships between firms and their employees are under siege. Jobs are being outsourced both to reduce benefits and to rid firms of the burdens of long-term relationships. Temporary and contingent work, though still small shares of total U.S. employment, are growing rapidly. In brief, labor is increasingly being treated as "just another commodity" to be bought and sold on a spot market. Thus the real world, though still far from the simple economic model, is again moving closer to it.

What is behind these changes? I do not believe the drive to turn labor into a commodity was rooted in intellectual arguments that real-world human resource practices were dysfunctional and ought to be replaced by more strictly arm's-length, price-mediated transactions. In fact, a substantial empirical literature argues just the opposite. Rather, Ronald Reagan helped break the back of the union movement when he smashed the PATCO strike in 1981, and the general political shift to the right probably emboldened management to oppose unions more vigorously and to claw back some of the rents it had previously shared with labor. Increased international competition may also have weakened labor's hand.

Nonetheless, economists' ideas did play an indirect role, I believe. Specifically, the greater concentration on profit maximization that I have previously discussed carried a stark corollary for the labor market: Slack had to be squeezed out.

5. DEVELOPMENTS IN FINANCIAL MARKETS

Aspects in which financial markets have changed to bring them closer to economists' idealized models may be the most familiar phenomena to this group. At some risk of describing a caricature rather than a model, let me just say that our canonical models envision markets that are efficient in the strong sense, highly competitive, and pretty much "complete"--meaning that you can buy or sell futures on just about anything. In the rarefied heights of general equilibrium theory, a full menu of Arrow-Debreu securities--defined by date, place, and "state of nature"--is assumed to exist.

The real world is not like this, of course, but it seems to be moving rapidly in that direction.

The proliferation of futures contracts, options, and other derivatives, and the "securitization" of seemingly everything have greatly broadened the available asset menu in recent years, bringing it closer to the full set of Arrow-Debreu securities. It would be a gross exaggeration to say that investors can now buy "contingent commodities," but you can buy bonds whose payments are tied to the occurrence of hurricanes or to the receipts of rock stars.

The basic theoretical insights into finance originally contributed by Markowitz's (1952) portfolio selection model, Sharpe's (1964) capital asset pricing model, and others have been so thoroughly incorporated into contemporary financial practice that they are now considered commonplace.

Options pricing has gone even further and now accords extraordinarily well with the Black-Scholes (1973) theory, which is based on exactly the sort of no-arbitrage condition which is the mother's milk of economic theory. Once options traders acted on intuition and hunches; now they carry around hand-held computers programmed with the Black-Scholes formula.

Some years ago, economists began to suggest that mutual funds should mechanically replicate broad stock indexes so that investors could ignore expensive but useless professional advice and simply buy "the market portfolio" with minimal transactions costs. Now, of course, index funds are so large that some observers worry that the demand thereby generated for S&P 500 stocks has inflated their values.

Even longer ago, economists argued for indexed bonds tied to the price level, which now also exist in several countries.

The large equity premium pointed out by Mehra and Prescott (1985) has become not only a well-known fact but a perceived reason to invest in stocks rather than bonds for the long run.

Commensurate with these developments, the major financial markets have become much more technical places. Generalists with square jaws, firm handshakes, and family connections have had to make room for more technically-minded "rocket scientists" with fewer social graces and more degrees in economics, mathematics, and physics. A whole new breed of investors called "macros" makes huge financial bets on interest rates and exchange rates based--I am not making this up--on the application of macroeconomic theory.

Financial practice on the supply sides of the markets has also been transformed. A decade or more ago, economists wondered why corporations paid dividends when, for example, stock buybacks could hand over the same money to shareholders at more favorable capital-gains tax rates. Some fascinating theoretical literature was developed to explain this "strange" (to economists) practice. The question was: What were our simple theories missing? But now the tables appear to have turned. Economists may never have explained corporate dividend payments satisfactorily, but corporations seem to have caught on to the message of economists! They now pay fewer dividends and engage in more stock buybacks.

The preceding list is not exhaustive. For better or for worse, the influence of economics on the financial markets has been pervasive. But does this influence derive from the power of ideas? In part, I think the answer is yes. But it certainly didn't hurt that many of these ideas were about new ways for financial market players to make money.

6. GREATER GLOBAL MOBILITY OF GOODS AND CAPITAL

Although barriers to mobility have long been recognized in trade theory, I think it fair to say that homo economicus inhabits a world in which both goods and capital move freely around the globe in search of the most favorable terms. A few decades ago, that was a ludicrous description of reality. But of late the world is said to be "globalizing" at a prodigious rate.

Once again, can we attribute this development to the persuasiveness of economists' ideas? Partly. Comparative advantage, which is surely one of history's most powerful thoughts, lies at the intellectual heart of the successive rounds of trade liberalization since World War II. But world

peace (comparatively speaking) and technological advances in transportation and telecommunications must have played much bigger roles.

7. GOVERNMENT REGULATORY POLICIES

Finally, even the purest versions of economic theory concede a regulatory role to government.

Start with environmental policy. At least since Pigou (1912), economists have believed that environmental externalities create a prima facie case for government intervention, and that such interventions are best carried out by levying appropriate taxes and subsidies. But for years this sage advice had essentially no impact on policy. As late as 1987, when I included a chapter on this subject in my book Hard Heads, Soft Hearts, economists' arguments had made little headway in the policy arena.

But things are vastly different today. While we have a long way to go, the economist's approach is now central to the public debate on environmental policy. One stunning example is the market in sulphur dioxide permits that has been running now for nine years, including these days trading on the Chicago Board of Trade. Tradable carbon emissions permits and variants thereon are also central elements in the U.S. government's policy toward global climate change.

The influence of economists' ideas is also apparent in court cases and regulatory policies designed to promote and protect competition--and I don't mean only the famed Chicago law-and-economics school. Many lawyers and even some judges have now studied enough economics so that concepts like marginal cost, oligopoly, and prisoner's dilemmas are now standard fare at regulatory hearings and trials. For example, the most widely accepted test of "predatory pricing" is whether price is below marginal cost.

In both of these regulatory examples, I think a strong case can be made that the power of ideas triumphed with relatively little help from the vested interests--who, in fact, often opposed the policy changes.

8. WHY DID IT HAPPEN?

I could go on detailing areas in which economists have had a "detectable influence on the societies in which they live"--but I won't. Instead, let me admit that there are also places where the

gap between economic theory and the real economy has not closed much, if at all. Several examples are mentioned in the written version of this talk. But in none of them has reality systematically moved further away from the model. Hence my conclusion: On balance, life is coming to imitate art. The question is why.

There is no single answer, but let me begin by reminding you of one of Keynes' (1936, p. 383) most famous quotations. You have heard it before:

...the ideas of economists and political philosophers... are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.

Ideas do have power. I believe economic ideas may have been among the predominant influences in such developments as the privatization of social security, the revolution in executive compensation, the myriad of changes in the financial system, and the gradual movement toward freer trade. This is the truest sense in which life has imitated art.

But in most of these cases powerful vested interests buttressed and magnified the force of the underlying ideas. Stock brokers stand to earn huge fees if Social Security is privatized, mutual fund managers and others who controlled capital pushed corporations to maximize profits more vigorously, financial innovations offered money-making opportunities, and so on. Clearly, ideas make more headway when they can harness the prodigious power of the invisible hand.

These two factors are generic. But I'd also like to call your attention to three aspects of recent history that have, I believe, contributed mightily to the economic changes I have discussed.

First, the worldwide shift of the political spectrum toward the right made many countries more receptive to neoclassical economic ideas than they once were. Economics is, after all, a rather "conservative" discipline. We economists emphasize efficiency over equity, glorify greed, and exalt the achievements of free markets, to name just a few. It is no accident that it is right wingers, not left wingers, who wear Adam Smith neckties.

Second, the failure of socialism and the ascendancy of the United States as the world's only superpower left many people around the world thinking that the American way must be the right way. And the American way is arguably the closest thing to textbook capitalism that exists in any major country.

Finally, although this entire talk has been about microeconomics, I must close by pointing out the crucial role of macroeconomic success and failure in inducing life to imitate this particular form of art art.

Nothing succeeds like success, and that's just what the U.S. economy has enjoyed since 1992. By contrast, Japan, with a unique microeconomic system that comes much closer to Akerlof's gift exchange model than to a spot market in labor, has suffered an utter macroeconomic collapse. And Europe, with its many restrictions on markets and thick social safety nets, has languished with high unemployment for the better part of two decades. The natural inference, to which many have jumped, is that America's purer, more hard-edged brand of capitalism must work better than either Europe's softer version or Japan's unique system.

Decades ago, Paul Samuelson wrote of a "neoclassical synthesis" in which proper application of macroeconomic stabilization policy would create the full-employment conditions necessary to validate neoclassical microeconomics. Well, to a first approximation, we have now achieved that neoclassical synthesis in the United States. Thus did the intellectual descendants of John Maynard Keynes pave the way for the worldwide comeback of Adam Smith.