# HOMO ECONOMICUS

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# Homo Economicus

My topic is economics - how and why markets depart from what Adam Smith predicted for them. If this is dismal science, at least it is timely, as I hope not too many of you have found to your sorrow. Some departures can be amusing and correctible, but others are insidious and dire. The thing to remember is that markets, and the governments which regulate them, are just people.

Adam Smith's famous metaphor for markets, the "invisible hand", stressed that individuals are interdependent in commerce but that their individual, self-serving, economic decisions, which use prices to signal when to buy, sell or produce, bring economic activity close to the optimum. Central planning in a command economy does not. Just ask the Soviets. The key to productivity is specialization, but individual skills and machines mesh magically with remarkably little waste. The trouble with this brilliant, pragmatic understanding of the commerce of Smith's time has been its success. His disciples claimed too much for it - that it can be applied to finance, as well as to the exchange of household goods and services, that markets are more trustworthy than government in regulating economic behaviour, and that the invisible hand provides useful self-correction when market excesses occur. Forgotten were Smith's skepticism about the motives of businessmen, his assumption that the moral, enlightened, Christian society of Glasgow in the 18th century would be the norm, and his argument that the government has a duty to protect the public from financial busts caused by reckless expansion of bank credit. Smith could not foresee the 21st century, but the mathematical models introduced by economists to reinforce Smith's views

have been based on unrealistic assumptions. The basic mistake has been to see homo economicus as rational. In practice it is remarkable that market function is ever reliable.

Market malfunction must be defined broadly - to include not only distortions of the Adam Smith model but adverse effects of market operations on the environment and society as a whole. Reliance on classical economic theory to understand and regulate modern economic activity is like equipping the Highway Patrol with Model T automobiles. Market malfunction comes in many flavors.

The first great departure from free market theory, monopoly, was practiced in the days of mercantalism and craft guilds, well before Adam Smith. Smith's views changed this, but titans like John D. Rockefeller saw its value. His Standard Oil Companies crushed competition mercilessly and unethically. It is surprising that antitrust laws were not enacted for 130 years after Smith's The; Wealth of Nations was published. But antitrust enforcement is tricky. Can Microsoft sell Windows software only to customers who also buy its browser? No. But one puzzled judge asked an antitrust plaintiff what the industry was that might have its trade restrained by the defendant's conduct. The idiosyncratic facts yielded no answer, just tough competition. Case dismissed. But mono-polistic practices flourish in new industries, especially electronics, and in state owned businesses. They are a goal of protectionism; the World Trade Organi-zation struggles to keep countries from subsidizing their own international firms. And monopoly is specifically approved, for a time, under patent law.

Is anticompetitive behaviour controlled by regulatory agencies? Sometimes.

But "crony capitalism" describes the situation where a market is not free, because it is regulated, but the regulators have been "captured" by the target industry. The watchdogs come to think like the industry's leaders, then move to employment in that industry; or, the other way around. Goldman, Sachs was happy to provide two Secretaries of the Treasury recently. The cliche is "the revolving door." Or, corruptly, regulators solicit funds for their political party in exchange for regulatory laxness. A factor in the Gulf oil spill?

Buyers and sellers in a market arrive at an informed decision about prices. Prices then become shorthand communications which enable individuals to participate in the market without detailed inquiry into the background data. Von Hayek received the Nobel Prize in Economics in 1974 for explaining the role of prices. Stiglitz received this prize in 2001 for documenting the baneful importance of hidden information, where one party to a transaction knows far more, or far less, than the other, and pricing suffers. Because the earliest work on this insight involved second-hand cars, this is called the problems of lemons. Sellers of used cars are perceived to have an incentive to offer defective cars as reliable. (Owners of genuinely good cars avoid this market.) Buyers will risk being defrauded only when prices are low enough, or there is a warranty. Pricing becomes volatile and unstable, reflecting the unequal knowledge between seller and buyer.

Hidden knowledge and imperfect price signals are very common. If you wish to borrow from a bank, or buy health insurance, or apply for a job, you know things about yourself which the bank, insurer or employer may not be able to

pry out of you. Conversely, a depositor in a bank may not know whether the bank faces insolvency. The solution for banking seems easy - Federal Deposit Insurance. But guarantees against loss lead to "moral hazard" on the part of the bank. Reckless investing of depositors' funds created the Savings and Loan debacle of the 1980s. Bank managers gambled with money which, if lost, would be returned to the depositors. But hundreds of S & Ls went bust. Fannie Mae and Freddie Mac, pseudogovernmental agencies in their mortgage brokering activities, said they were private companies, but they knew that their losses would be covered by the Federal government. So, as Barney Frank stated with approval, they rolled the dice. Adam Smith knew that financial systems can never be completely free markets.

Health insurance is another special market distortion. The individual applicant has information to hide. The insurance company requires a large pool of apparently healthy people to support the payment of claims. The sick insureds are the lemons. The healthy young will demand lower rates than average, or will avoid insurance entirely. Solution: subsidize employers to provide health insurance by making costs deductible from their income taxes; do not make this coverage taxable to the employees; compel all citizens to become insured; and compel insurance companies to accept all applicants. Three problems arise: a separate program will be needed for the poor or unemployed; insureds have minimal incentive to control utilization and costs; and insurance costs will rise because lemons can get insurance after they become ill. Complicating this market is the government's interest in controlling prices and costs. This market is so imperfect that perhaps only the government can run it. Adam Smith is irrelevant. There were no significant medical treatments in his day.

Let's turn now to situations where rational self-interest in the marketplace leads to bad social outcomes. Consider "The Prisoner's Dilemma." Two individuals are arrested for a joint crime. Each is made to plead without knowing the other's plea. If both deny guilt, it is likely that neither can be convicted except for a trivial offense. For prisoner number one, confessing will lead to a short sentence provided prisoner two sticks to denial and is convicted. He goes to jail for five years. But if prisoner two confesses and prisoner one does not, it is prisoner one who risks five years in jail. Both prisoners figure this out. Their rational course is to confess, both of them, even though, had they both denied guilt, they would escape a serious charge. How might this apply to economics?

Suppose you own a coal-fired plant which generates electricity and in your town you have one, equal competitor. You two are being sued to install filters to cut carbon emissions. Each of you makes $15 million a year, after $5 million annual legal expenses to defend the lawsuit. If you both install filters, and raise rates to cover the cost, the town will end the lawsuit and yearly profits will rise to $20 million. Cooperation will benefit you, your competitor and the town. But to act in tandem would violate the Sherman Antitrust Law, and you might not want to anyway. Why not? If your competitor double crosses you and does not install filters, while you do, you will have new costs and higher rates and he may steal a chunk of your business. If your competitor does install filters, you should decide not to do so. Either way, no matter what he decides, your best option is not to install. He, of course, will make the same analysis and the same decision. Society suffers. In economic activity such choices arise often, among independent parties. The temptation to take advantage of competitors, or to minimize unfavorable outcomes, is hard to resist despite obvious social costs.

A significant social cost of market self-interest is "spillovers" or "externalities" These occur where the private value of an economic activity is distinct from its social costs. The industrialists who built railroads were not interested in the danger that sparks from locomotives burned farmers' crops, nor chemical companies in preventing pollution of rivers. Pigou, an Englishman, established this distinction in 1920 and called for government regulation to promote the "total welfare of citizens as a whole." There is a Pigou Club working on the spillover of carbon emissions. Members include former Secretary of State George Schultz, Alan Greenspan, Judge Richard Posner and economists Greg Mankiw and Gary Becker. Spillovers challenge laissez-faire.

Even worse is the deliberate despoiling of natural resources - an aquifer, the fish supply in an ocean, a mountain full of ore, a forest. This is "The Tragedy of the Commons." Economic man is rational in this activity, but selfish in the extreme. OPEC members meet to lower quotas for the production of oil, agree to do so, and commonly reneg on their promises.

Analogous is the failure of market competitors to promote the public welfare by engaging in unprofitable private ventures. Such ventures are called "public goods." Pigou identified building lighthouses and public parks. Among the public goods expected of national governments are air defense and interstate highway systems. But there is disagreement about which ventures should be public and how to pay for them. Schools, urban redevelopment, light rail transportation? John Galbraith in The Affluent Society used the phrase "private affluence, public squalor."

A crticial public good, also provided privately, is scientific knowledge. Technical

progress accounts for more than half of annual increases in GDP. Schumpeter called for innovation through "creative destruction" as the key to survival in modern industry. Look at Apple and its recent products! So what is the role of government in creating scientific knowledge? Massive. Federal funding for research has given us jet engines, the Internet, satellite TV, GPS navigation, smoke detectors and much, much more. Collaboration between governments and universities is taken for granted. Governments have incentives - to create jobs through new industries, to improve military hardware or to put men into space - and are less concerned with costs and the possibility that an innovation by one firm will be stolen by another. Patent protection has been expanded to government-financed findings made at private universities. In the jungle of globalization this collaboration between public and private sectors is a United States tiger.

So much for classical market failures. A fresh, new breeze is blowing through economic theory - questioning "How does homo economicus actually behave?", not "How will rational man behave?"

This can be tricky. For example: a ballot initiative proposes to increase the minimum wage. This is likely to increase prices for a variety of services, and raise the unemployment rate for unskilled workers. But the initiative passes - a vote against the voters self-interest. Why? If most of the voters were totally ignorant of the issues, their votes should balance out and the decision would be made by informed voters. But this is a myth because uninformed persons have opinions, sympathies which are wrong, and vote accordingly. How irrational! Oddly, this "irrational" behaviour is predicted by classical theory! Look at your supply and demand graph. If the price of irrationality is very low, the quantity

which may be comfortably consumed can be large. In voting, no one vote counts for much. So a millionaire Oscar winner will support a left wing candidate preaching income redistribution because this "looks good" and she knows her vote will not determine the outcome. If she were the Vice-President voting to break a Senate deadlock, the personal price of her action would soar.

Other economic behaviour is at odds with any theory of rationality. The Chicago School of Milton Friedman held that when the price of financial assets departs from economic fundamentals, professionals swoop in, take profits and restore correct pricing. John Maynard Keynes was skeptical about this and all theories about economic man. He was interested in real behaviour. Take his famous "Beauty Contest." A newspaper publishes photographs of 100 lovely women and offers a prize for the competitor who picks the six prettiest - by coming closest to the average choices of all competitors. To win, a competitor cannot indulge his own notions of the prettiest; he must anticipate the other competitors' average choices as they too guess at average opinion. This is a third remove from using his own notions. For Keynes, this described investing. He said that when it comes to the future performance of financial assets, "we simply do not know." And uncertainty can subvert our analytical abilities.

On October 19, 1987, the stock market lost 22.6% in one day. There was no economic news to cause this, only investors' misperceptions of each other's reasons for selling. Keynes knew that when there is no solid basis for future valuation, unreasoning waves of optimism and pessimism will spook the market. First one, and then the other, in the Greater Fool bubble of 2000 in Internet stocks. On the other hand, there are reasons why a rational investor will not blow the whistle on a bubble, but will participate in it.

An 1841 volume about the South Sea Bubble of 1720 was entitled Extraordinary Popular Delusions and the Madness of Crowds. It quoted a banker who knew it was a fraud: "When the rest of the world is mad, we must imitate them in some measure." Sophisticated investors knowingly pump up bubbles - for a time. Jeffrey Vinik, manager of the Magellan mutual fund in 1995, saw the dot com bubble building and moved millions from stocks to bonds. Shares soared, and he resigned in 1996. He was early, and this was the same thing as being wrong. His successor poured money into dot com stocks, guessing what others would do and admitting that his analysis was not rational. When the bubble burst, he held his job. Although some of his peers got out before the market collapsed, he had made money and he was not alone, bucking a trend. Young fund managers who deviate from their peers are more likely to lose their jobs than those who follow the herd, regardless of outcomes.

Students in an experiment were shown two white placards, one with a black line of a certain length and the other with three lines, one of which was of that same length. They were asked to choose the identical line. But all the students except one were stooges, instructed to choose incorrectly, and they announced their answers first. In hundreds of repetitions of this game only one in four of the true volunteers gave the right answer. Three of four relied on the mistaken judgment of the stooges. We are trained from childhood to learn from the actions of others - social learning. When numbers of others are buying or selling a security, we, with our sketchy data and understanding, may scrap our private views and join what economists call an "information cascade" involving a bubble

or a crash. Individual rationality is lost. Rudyard Kipling got it right: "If you can trust yourself when all men doubt you, and make allowance for their doubting too."

Keynes regarded investing as a game played between sophisticates and boobs. The former are rational, well informed and able to process data unused in standard statistics. The latter follow financial gurus, fail to diversify, churn their portfolios, sell winners and hold losers, ignore management fees and buy overpriced securities largely because their prices have risen. Sophisticates will trade alongside the boobs - for a while, and avoid selling short because the boobs may cause the market to rise, not fall - for a while. But they exit before the crash. The sophisticates are often rational; the boobs are not.

Of course, wishful thinking has been understood since Plato, who hypothesized a divided self. Adam Smith, Professor of Moral Philosophy, talked about "the passions" versus "the impartial spectator", reason, in decision making. His catalogue of mental limitations reads like a critique of his own assumption of a rational economic man: inability to imagine long term outcomes; underestimation of risks; insistence on immediate gratification; overrating one's own abilities; and lack of concern for the well being of others. But these insights are in The Wealth of Nations; they were lost as the models for a rational homo economicus, able to rank outcomes with mathematical probability, gained sway.

In 2002 Daniel Kahneman, became the first non-economist to receive the Nobel Prize for Economics, for showing that, faced with uncertainty, including economic puzzlement, most human beings resort to mistaken rules of thumb, called "heuristics." The representativeness heuristic holds that anecdotal information is evidence of a larger truth. Three losses in a row do not mean that the Yankees will not win the pennant. Short term trends in the securities market will probably not continue. Regression to the mean is more likely. The availability heuristic predicts something unlikely on the ground that it happened to someone the believer knows. Might your death result from terrorist bombing or from a car accident? After 9/11 many Americans said the former while the latter is 400 times more likely. The threshhold heuristic describes the temptation for persons, with good times all around them and no experience of dangerous risk, to assign zero probability to catastrophe. Memory cannot speak when there is none.

Kahneman reduced rational economic man to a shadow. The profession now

accepts the psychological insights of what has become "behavioural economics" and uses them to identify new kinds of market failure. For example, why do most corporate takeovers fail to deliver the financial benefits promised by the acquiring CEO? The likeliest reason is overconfidence, hubris, which ignores contrary evidence. Why do humans spend excessively and fail to save, even when retirement savings will be matched by an employer? Mental myopia about the future, as Smith catalogued.

Science, in the form of brain scans, is supporting psychological insights. In humans the prefrontal cortex processes complex thinking, as in solving mathematical problems. Emotional stress activates the limbic region, the amygdala, deep within the oldest brain structures and common to many species. When volunteers were told that a pack of cards had twenty red and twenty black cards and were asked to predict which color the next card to be drawn would be, their prefrontal cortices lit up and went to work. When they not told the color composition of the deck and were asked to make the same prediction, the amygdala became much more active. Interpretation? The brain does not like ambiguous situations. When it can't figure out what is happening, the amygdala transmits fear to the frontal cortex. When offered the choice between a $15 gift certificate usable immediately,, and a $20 one usable a month later, volunteers showed frontal cortex activity while considering both options, but the immediate option triggered a rush of activity in the limbic region. The more limbic activity, the more likely that the volunteer would grab the immediate option. Our economic well being may be determined in part by biochemical reactions beyond our control, induced by the stress of ever present uncertainty.

Some advocates of free markets acknowledged the 2007-8 recession but denied that it was caused by general market failure. They talked about malfunction in two corners of the market - finance and housing. This is bunk, but Judge Posner has a point when he notes that unbridled greed is what markets permit, even encourage, if the actors are eager for it. Whatever we call it, our recent financial crisis was not foreseen by most economic seers. Here is a rough sequence of what happened.

During the first seven years of this century, the United States continued to have a large current accounts deficit, indicating net expenditures over receipts in foreign trade. Other countries poured their resulting suprluses back into the United States in the form of purchases of Treasury securities and other capital investments. This borrowing from abroad financed our government and relieved it of the need to raise taxes. President Bush reduced taxes to stimulate the economy after the dot.com stock market collapse. The Fed was able to keep interest rates very low, again to help recovery from the dot.com debacle. And the Republican administration began a debt-financed spending spree, notably on the military and new Medicare benefits. New foreign debt reached five trillion dollars. Individuals, like their government, became enthusiastic about debt. Money was cheap and plentiful. With gobs of money seeking a return, lenders worked their way down the credit-worthiness scale. Fed Chairman Greenspan kept interest rates close to zero. Saving for a cloudy future stopped. Prior to 1993 the ratio of household debt to Gross Domestic Product averaged about 80%. By 2003 it was 120% and by 2006 nearly 130%. This huge increase in debt went to

the housing market, causing record increases in prices. Greenspan and his successor Bernanke did not see a bubble. They justified high house prices by the liquidity given the market by new methods of financing (and the resulting decline of risk), by their opinion that the private sector can judge equilibrium housing prices better than bureaucrats, and by holding that regulatory agencies responsible for lending standards, not the Fed, were responsible for bubbles resulting from inappropriate lending practices. Everyone was making money. All seemed well. Regulation was weak to non-existent. Investment banks were allowed to triple their leverage - the amount they could borrow against their capital. Greenspan believed that banks would pay sufficient attention to their own best interests that they would voluntarily avoid excessive risk. New methods of financing and hedging against loss - securitization of mortgage loans, credit default swaps (a form of insurance), and derivatives - were praised, not condemned. And a "shadow banking" industry flourished, composed of risk-taking lenders which were not regulated as banks were.

The final ingredient was the government itself. Fannie Mae and Freddie Mac, by far the two largest mortgage companies in the world, are that strange hybrid, quasi-governmental agencies. They are structured like private firms, but they can pass losses on to the taxpayers. They originated, and bought, thousands of home mortgages, in good part because Washington's politicians urged them to. The Clinton administration had exempted them from the capital standards required of banks. It was popular politics to encourage citizens to own their own homes. For five years the Wall Street Journal had editorialized against this moral

hazard.

And so the sand castle crumbled, grain by grain, washed away by the returning tide of rational valuations. Subprime mortgagees began to default when "teaser" interest rates rose as planned. Mortgage-backed securities became unsaleable - no one could affirm the value of the mortgages securitized. Banks lost billions and curtailed their lending. Financial firms became reluctant to lend to one another! Credit markets froze. The government, as lender of last resort, had no choice but to save the financial system with huge infusions of funds, forced marriages between firms in distress, and bail-outs for key industries. When it allowed Lehman Brothers to go bankrupt, it almost undercut its salvage program.

How did homo economicus behave before reality returned? As we might expect, he exhibited the full spectrum of undisciplined behaviour. He ignored the welfare of his society as a whole. He was optimistic that the good times would last forever. He was not counseled by history, but, as predicted by the "threshhold heuristic", he lacked experience of downturns and discounted their possibility. He showed his usual inclination to concentrate on immediate gratification; he did not think long term. If some lenders and buyers realized that there was a housing bubble, they chose to ride it rather than to shout that it would burst. When it came to mistrust among financial firms and reluctance to lend to each other, the problem of unequal information arose. No Chief Financial Officer was eager to reveal toxic holes in his balance sheet.

To borrow the technique of the representativeness heuristic, we can look at an anecdote and speculate about its larger meaning. In my condominium building

the janitor and a concierge bought houses using mortgages they could not afford. They were not deceived; they wanted riches quickly and planned to "flip" their houses. After a year each had gained about $100,000, on paper. But they did not sell before the market collapsed - one of them because his wife liked the house and did not want to leave. They have shrugged off their poor timing, but believe that a majority of holders of unaffordable mortgages were like themselves, gamblers and not victims of fraud. Public policy to forestall foreclosures holds otherwise.

There were probably instances where CEOs in target industries coopted their weak regulators, as usual, but the interesting situation was that of Fannie Mae and Freddie Mac. These quasi-governmental agencies gave large, annual donations to the very politicians who endorsed their risky mortgage lending and had the power to alter their lending standards. Their executives paid themselves outsize salaries. Neither the executives nor the politicians saw any reason to change this quid pro quo, especially when it resulted in more home ownership - and more profits.

And, of course, homo economicus was sometimes a crook. A new Federal agency to protect consumers will prevent that, and will try not to discourage lending.

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The recent book by Rogoff and Reinhart about economic crises through history has the ironic title, This Time Is Different. This study goes back centuries, using the best data it can find. Even since World War II there have been similar financial crises in other countries which might have warned against the 2007-8 recession. Mexico, Asia and Argentina are cases in point. The one constant

throughout all of these crises is the prevailing conviction at the time that circumstances have changed, financial systems have improved, government supervision has strengthened, and the old methods of valuation are no longer applicable. This conviction is invariably wrong. It is a tribute to the wishful thinking of human beings that it keeps recurring. And homo economicus forgets another key insight into market crises: the fragility of confidence in a future which is never certain. It can be lost abruptly, for reasons too numerous to mention.

What's ahead for the United States? We may have overcome a credit crisis only to enter a debt crisis, the solution to which will involve unaccustomed austerity, heavier taxation, increased savings, reduced consumption, a dash of inflation, persistently high unemployment and political anger, right and left. But that is another essay - being written increasingly in current publications.

This simple sketch will close with a preemptive comment: Pity the poor economist - the topic is more complicated than that!

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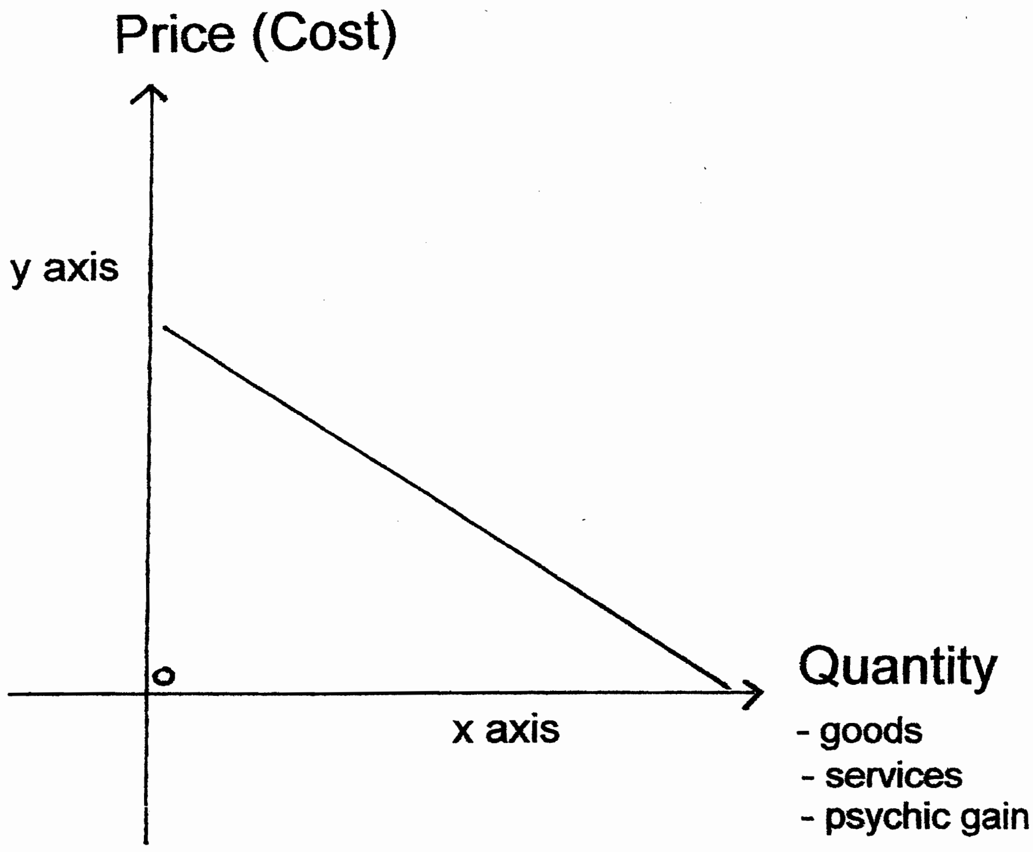


The demand curve at various prices