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## Preface

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This book was written not only to entertain, but also to help expand the reader's horizons. Even those who have learned a proper profession should for once have a chance to see the world from the vantage point of an economist. It is an experience not unlike looking through a thermal imaging camera: Many things appear blurred and distorted, yet certain features come into view that the naked eye would never catch. And it is certainly interesting.

The book is also meant to educate. Readers studying economics, or who have done so in the past or intend to do so, will obtain an overview of the many directions the discipline has taken. Especially in recent years, economics and business studies have made huge strides. They have become more empirical, more realistic. It is this type of a contemporary economic science which we refer to as Economics Version 2.0.

Mathematical formulae and abstract graphs facilitate scientific analysis. Alas, they have limited entertainment value and so you will find none of them in this book. Those who cannot do without may read up on them in the original scientific texts this book draws from. All sources are listed. Exceptionally trustful or highly skeptical types may want to peruse the detailed pointers in the last chapter first.

—*Norbert Häring* and *Olaf Storbeck*,  
December 2008



# From Dogma to Data— An Introduction

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“How many economists does it take to change a light bulb? Answer: not a single one. If a new light bulb was needed, the market would have taken care of it.” These kinds of hackneyed jokes about economists come by the dozen. The spectrum reaches from one-liners (“Economists predicted nine out of the last five recessions”) to intellectually glib aphorisms (“Economics is the only discipline where two scientists are awarded the Nobel Prize because they came to diametrically opposite conclusions”). Yet all these jokes shine a spotlight on the public perception of what economics really stands for. Economists are frequently depicted as removed from reality and vague by design, enamored with the market as they obsess about models and charts. Criticism of economics is as old as the discipline itself. As early as the nineteenth century, Thomas Carlyle described the profession as “the dismal science,” a characterization that has stuck to this day. Economists, as the saying goes, know the price of everything and the value of nothing. Scientists from outside of the profession even accuse our profession of “imperialism,” because as economists, we are wont to stick our noses into matters supposedly alien to us, from family life and happiness

to health. In the past, such criticism may have been partially deserved. Over the last two decades, though, economics has undergone an exciting shift: the profession has moved closer to people and their problems. With increasing frequency, the often-decried gap between science and “real life” is being bridged. Data instead of dogma is the common denominator for modern economics. The engine for such development was the discovery and use of two new scientific methods: game theory and its empirical counterpart, experimental economics. Both fields of research have jointly revolutionized economics and its exponents’ view of human behavior. Concurrently, they furnished means to economists that enabled them, not unlike design engineers, to build more effective institutions and arrive at better decisions. Game theory is a mathematically rigorous tool for analysis of a given strategic interaction. Prior to its “invention” around the middle of the last century by John von Neumann, Oscar Morgenstern, and John F. Nash, economic theory had traditionally assumed that there were so many players active in a marketplace that the response of each of them to another’s actions was essentially negligible to that other player. This may be an acceptable simplification for the purchase of, say, a carton of milk in the supermarket; however, when it comes to labor and environmental negotiations, the regulating of infrastructural markets, or oligopolistic competition and other forms of conflict and cooperation, such models are obviously of very little help. Game theory frees us of such methodological constraints. It affords us the analysis of economic, social and political interaction inside and outside of markets by use of transparent methods. It lets us detect interdependencies of economic and social behavior and helps us better understand the influence market rules and the rules governing other types of interaction have on decision making.

Game theory proves to be a highly effective advisor where incentives and behavioral strategies are concerned. Nevertheless,

it has its limits. Players populating the virtual worlds of game theory generally act without any cultural or social backdrop, but with unlimited capacity for computation. While such simplistic assumptions may be useful at times, they can easily lead to conclusions that are fundamentally wrong. One example may illustrate this point: From the angle of game theory, chess is a totally boring game. Since there are no uncertainties about the opponent's strategic options, and all moves can be exactly observed and verified, a perfectly rational player knows precisely how the opponent will react to any possible move. In other words, both players know before the first move how the game will unfold and what its outcome will be. Using game-theoretical methods, it is fairly easy to prove that the victorious side is determined prior to the first move, assuming rational behavior on both parts. On the other hand, it is equally certain that no mathematical capability of either man or machine would be enough to play chess rationally. So, how do individuals act in complex situations?

The second novelty, experimental economic research, rang in a new era for economics science. As early as in the late 1950s, economists began testing economic phenomena in laboratory experiments. The leading pioneers at the time were the later Nobel laureates in economics, Vernon Smith and Reinhard Selten. Yet decades would pass before the new methods became widely accepted. The preconception that experiments are impracticable in economic research was thoroughly entrenched in experts' minds. Today, experimental economics research is one of the most successful sectors within the science of economics. Hardly any faculty worth its salt can afford to do without a test lab.

Experimental economic research can be considered complementary to game theory, in that it concerns itself with the behavior of flesh-and-blood humans. And—lo and behold!—humans will act totally differently from what traditional economics asserts.

Fairness in negotiations, for instance, can be a great motivator and play an important role; cognitive constraints will induce systematic errors in financial market dealings, and past experiences may well skew future behavior. (This book is a goldmine for anyone wishing to delve deeper into those phenomena.)

The systematic investigation of such phenomena in tightly controlled, experimental environments reveals that individuals do not act irrationally or even chaotically. Flesh-and-blood humans hew to their own rationales. This may not always be in agreement with those of the “homo oeconomicus,” but they behave in a generally systematic and predictable fashion that can be described by economic models. This fact enables economists to leave well-trodden paths behind and develop new, descriptively relevant theories of behavior. Some of them turned out to be surprisingly robust and empirically productive. They represent the foundation of a new kind of economics we call “behavioral economics.”

The renewed vigor that game theory and experimental economics has brought to the science is further enhanced by exciting developments in related fields. Psychology, in particular, has greatly enriched economics over the past decades. It is for good reason that Daniel Kahneman became the first psychologist to receive the Nobel Prize in economics for his Prospect Theory, developed in collaboration with Amos Tversky, as it provided the basis for the emergence and popularity of the discipline of “behavioral finance.” Lately, economists have been attempting to pry even deeper into the workings of the mind, as it were. Neuro-economics combines the methods of neuroscience with those of economics. It especially seeks to identify and understand processes taking place inside the brain that go hand-in-hand with the formation of perceptions and decisions.

Innovations in mathematical methods are another factor that, over the past two decades, contributed to the advancement of the science of economics. Economic theory and statistics continue

to develop ever more refined and complex models and methods of analysis. Concomitant with it, economics has profited from technological progress. Computing power has exploded since 1980. With the press of a button, simple personal computers are able to perform complex arithmetical operations, which would have required entire computer farms two decades ago, and a tremendous amount of money and time.

An increasing reliance on mathematics, though, is not universally welcomed, even within the profession. The American economist Alan Blinder speaks of a mathematics race and complains about economics having become more math-dependent than physics. Indeed, there has been a time when our profession was in thrall to mathematics. This time is over now—at least as far as applied economics are concerned. Though modern economics cannot function without mathematics, today its methods are in thrall to us, helping us get a better grip on the economic problems of real life. How should the electric-power market be structured to achieve optimal efficiency? What tools of economic policy can help solve the unemployment problem? What are the effects of a minimum wage policy? How do cooperation, trust, and competition interact in anonymous online markets? Which incentive systems motivate people, which might have the opposite effect? How should places at day care centers or organs for transplantation be allocated? How should UMTS frequency blocks be auctioned off?

Modern economics seeks to answer these and similar questions. Rather than continuing to derive answers from its fount of eternal truths, it now employs a variety of methods and a clear focus in developing and verifying its theories. Modern economists are no longer content with just having an understanding of the markets—they are eager to use their expertise to actually improve them. Based on the latest advances in terms of methods and substance, it is becoming increasingly feasible indeed to dissect and control behavior and institutions. Innovative testing technologies

allow for a seamless transition from lab studies to the field. Even highly complex, genuine markets such as the electricity market or electronic auctions, can be made accessible and manageable in the wake, as it were, of a profound scientific investigation. The gap between basic research and reality disappears, with positive results for the economy and society at large.

With this book, Olaf Storbeck and Norbert Häring provide an overview of the exciting developments and insights of modern economic science, easy to understand even for the uninitiated reader. Not only do the authors analyze the relevant—and sometimes hardly digestible—scientific literature in great detail, they also challenge its claims and conclusions with an unfailing journalistic instinct for what is crucial. The result is an exceptionally competent and elegant review of state-of-the-art research. The book is perfectly suited to soften any prejudices held about economics, and to strengthen our intuitive comprehension of economic causality. With scientific journalism of this quality, we have reason to hope that soon those economist jokes mentioned earlier will no longer be understood.

# 1

## Man—An Economic Animal?

The machine sits deep below ground, in a windowless room on the second basement level of the Zurich University hospital. The way there leads through long halls lit by cold fluorescent tubes. “Caution: Powerful magnetic field,” a sign warns at the last hurdle, a four-inch-thick steel door. Before entering the visitor is asked to hand over all metallic objects. Located behind the door is an apparatus taller than a man that resembles a computer tomography machine. It enables you to watch people thinking—it is a brain scanner made by Philips.

One wouldn’t expect to meet economists at a place like this. Yet the Zurich economist Ernst Fehr conducts his research here, deep underground together with brain researchers and psychologists. The research team works on unlocking fundamental questions of human behavior and social interaction: When do individuals trust one another? When do they cooperate? What causes them to act selfishly and when do they care for more than their own narrow benefits? What conditions prompt individuals to break social norms?

A scientific revolution, at least for traditional economists. Until recently economists have not asked these types of questions. True, economics is the science of economic decisions and of dealing with resource shortages, but man himself, his likes and dislikes and the motives governing his decisions, has

traditionally been treated as a non-issue. Economists, an old paradigm commands, do not get to the bottom of preferences—they take them for granted.

This form of economics was rooted in the basic assumption that man is an economic animal, a *Homo oeconomicus*. In the economic arena of situational decision making, so the dictum went, we will always act rationally, selfishly, rigidly pursuing our own interests. In economists' well-worn models, flesh-and-blood people became "economic subjects" who will mercilessly seek to maximize their own benefit—with nothing else on their minds. Much like a robot, *Homo oeconomicus* will impartially and rationally weigh advantage against disadvantage. Moral considerations, scruples or thoughts of fairness are utterly alien to him—he will grab any chance he gets to gain an advantage over others. Even today, every economics freshman is confronted with this concept.

Not a particularly likable image of the human race, even economists are quick to concede. None of them would want his daughter married to a true *Homo oeconomicus*. But not to fear: The risk of running into someone that rational and selfish, and bent only on maximizing his own advantage, is rather small. Over the past years, economists have shown that in real life, individuals behave neither as selfishly nor as rationally as economists tended to assume in their models. As demonstrated in countless lab experiments and field tests, man is a far more social and less rational creature than is postulated by traditional economics. Phenomena like the desire to be fair and cooperative are not negligible side issues—they are core constituents of human nature. Without them, economic action cannot be fully understood or described.

One of the first experiments to call into question the thesis of *Homo oeconomicus* was the "ultimatum game." In it, two individuals—let's call them Peter and Paul—are to decide how to divide between them a given sum (say, \$100). The rules are simple

yet strict: Peter may put forward one proposal only, which Paul can only accept or reject. If Paul rejects Peter's offer, both will go home empty-handed. Now, if both acted like a true *Homo oeconomicus*, Peter would try to get the best possible deal for himself, which is \$99.99. Paul would accept this offer, cheeky as it may be, because one cent is better than nothing. The fact that the other party would get away with so much more would not keep him from accepting—as a rational egoist, he would only have his possible best interests in mind.

Yet in reality, it does not work that way. Hundreds of experiments have demonstrated that, as a general rule, both players will divide up the money much more equitably. Offers below 20 percent are likely to be rejected, as the second player will judge them to be unfair. At the same time, other experiments show that pure altruism is just as alien to us as extreme selfishness. All in all, individuals will tend to be interested in how their own situation evolves compared to other people, rather than focusing solely on their absolute situation (i.e., regardless of the other person's)—as would be of supreme importance to a true *Homo oeconomicus*.

One of the golden rules of human behavior is to pay like with like. “Most people act in reciprocal fashion,” explains Armin Falk, director of the Laboratory for Experimental Economics Research at Bonn University. “They will reward fair behavior and punish unfair behavior, even if it costs them.”

Another key driver of how fairly or self-centeredly we act is the institutional framework within which we move: In a highly competitive environment we will become more selfish than in one that emphasizes cooperation. In variations of the ultimatum game where the ratio of division proposed by one player becomes valid as soon as one of several coplayers accepts, the proposing player will usually be able to keep most of the cake to himself. From that we can conclude that, in highly competitive situations

of decision making, the selfishness theorem of economists may be a reasonable approximation.

When, why and precisely under what circumstances adults will act selfishly or cooperatively, how they arrive at a rational or a gut decision is still a matter of speculation for economists. The cooperation with brain researchers, so they hope, may provide better answers. “We explore the biological foundations of human social behavior,” says Ernst Fehr, one of the pioneers in the still-young discipline of “neuro-economics.”

Its basic hypothesis is that to understand human decision making, we need to understand how the brain arrives at those decisions. In the past, this was a “black box” to economists, as were individual preferences. “The foundations of economic theory were constructed assuming that details about the functioning of the brain’s black box would not be known,” write neuro-economists Colin Camerer, George Loewenstein and Drazen Prelec. Today, the technology of image processing enables scientists to pinpoint the regions of the brain that are actively involved in economic decisions. “The study of the brain and nervous system *is* beginning to allow direct measurement of thoughts and feelings,” Camerer, Loewenstein and Prelec point out.

The research team around Fehr discovered that altruistic punishment has biological roots. When an individual decides to sanction unfair behavior, the brain activates an important region of the reward system—which the scientists interpret to mean that the individual derives satisfaction or self-confirmation from effecting punishment. Other experiments show that the same brain regions are active when we suffer pain and when we witness the pain of others; this may be another reason why people do not act in a purely selfish manner.

The inclination to trust others is also contingent on biological factors. Another finding of Fehr’s team is that the hormone oxytocin plays an important part: Test persons who had the

hormone administered displayed more trust in others than did those who were given a placebo. “Oxytocin specifically affects an individual’s willingness to accept social risks arising through interpersonal interactions,” the scientists conclude.

## The Economic Split Personality

A key finding of neuro-economic research is that during decision processes, different regions of the brain compete with each other. Put in simple terms, the sector responsible for emotion is in conflict with the sector governing logic. “In many circumstances—including those familiar to humanity’s evolutionary ancestors—these different types of mechanism function synergistically to achieve our goals. However, in the circumstances of modern life, these systems may prescribe different behaviors. In such cases, the outcome of competition between these mechanisms determines behavior,” emphasizes Jonathan Cohen, professor of psychology at Princeton, in a survey article published in the *Journal of Economic Perspectives*.

The phenomenon may explain why people come to contradictory conclusions when facing inter-temporal problems. If an individual was offered the choice of either receiving \$10 today or \$11 tomorrow, he would most likely opt for the \$10. Given the choice of receiving \$10 in a year’s time or \$11 in a year and one day, he will settle for the longer waiting time to get the extra dollar.

A research team around Cohen and Harvard economist David Laibson found that for decisions with a short time horizon, the brain sector predominantly involved is the limbic system, which is assumed to govern emotions and urges. Decisions involving a longer time horizon are the domain of the prefrontal cortex, generally regarded as the locus of reason.

Increasingly, these findings are making their way into economic theory. For instance, a model developed by Harvard

economists Drew Fudenberg and David Levine takes explicit account of the internal competition between the brain's two agencies for decision making. Man is modeled as having two kinds of personalities—a “series of short-run, impulsive selves” and a “long-run, patient self.” Our short-run selves are exclusively concerned with maximizing the good times of the moment, the long-run selves think ahead to the day after tomorrow.

Fudenberg and Levine's model explains a series of phenomena that traditional economics have taken for irrational behavior—such as the observation that people engaged in low-stake bets tend to show a degree of risk aversion that seems absurd, considering the overall assets they have at their disposal. Or the fact that people that have unexpectedly come into cash money will exhibit different attitudes toward spending it than they do after receiving the same amount via their bank account.

When different regions of the brain are responsible for either significant or insignificant financial decisions, this phenomenon becomes much easier to explain: The hedonistic, short-run part of the personality in Fudenberg and Levine's model is only permitted to spend what pocket money it has been granted by the long-run self. Longer-term financial decisions take place in another sector, the “banking sphere.” Here, the long-run self is calling the shots. In daily life, the hedonistic, short-run self will relate each expense to the daily budget available, while the total assets in the bank account (to which it has no access) are essentially a non-factor. Going to the bank takes too much time. For a *Homo oeconomicus*, on the other hand, the crucial yardstick will always be the total asset base.

However, credit cards and ATMs open new vistas for the hedonistic self. It is these problematic ancillary areas of the model that are particularly instructive. If the hedonistic self obtains instant access to the banking sphere, it will max out the checking account and stretch the credit card to its limit.

The latter phenomenon has preoccupied economists for quite a while. Although credit card interest rates are substantially higher than those on consumer loans, countless Americans have amassed credit card debt instead of taking out a loan. For the *Homo oeconomicus*, this would be nothing less than a waste of money. For subjective man, though, it is quite sensible behavior: The higher interest payments are debited to the initiator—the hedonistic self. Its everyday budget will be cut. Yet if the planning self were to reschedule its debts, it would give the other (hedonistic) part of the personality more latitude for piling up debt, which it would soon take advantage of. The credit card business thus benefits handsomely from a phenomenon that, according to traditional economic theory, shouldn't even exist.

## When Economists Go to Kindergarten

People of flesh and blood will react to economic incentives in ways that are altogether different from what economists—beholden to their traditional models—would predict. One reason for this is the potential competition between intrinsic and extrinsic motivation.

This was demonstrated impressively by the U.S.-based economists Uri Gneezy and Aldo Rustichini. They investigated a relatively simple question: What will happen when a kindergarten charges parents a fee for being late picking up their children? According to prevailing economic theory, the number of late pickups should decline, since incentives rise for parents to be on time.

The two researchers put the theory to the test in several Israeli daycare centers and found the exact opposite to occur: Once a fee for late-arriving parents was introduced, tardiness increased significantly. Even following abolition of the late fee, tardiness persisted on the higher level. For an explanation of the results, Gneezy and Rustichini took a page out of psychology's and sociology's book: The late fee, from the viewpoint

of parents, changed the unspoken covenants of social relations vis-à-vis the kindergarten. Originally, it had simply been a case of proper conduct to be punctual—or else a kindergarten aide would have to watch the kids on his/her own time. Parents would perceive this as a favor being granted rather than a market transaction. It was a matter of honor and decency to take advantage of the favor only if it was absolutely unavoidable. The late fee, though, put a price on the act of tardiness. The supervision of the children became a service, payable like any other offered by the kindergarten. Thus, tardiness from the parents' viewpoint became acceptable behavior. In the jargon of psychologists: A powerful, intrinsic motive was crowded out by a weaker, extrinsic one.

## Why You Shouldn't Trust Your Children

Social behavior is something we must struggle to learn in our childhood and youth. Children behave much more like a *Homo oeconomicus* than adults do, as shown by economists Matthias Sutter (University of Innsbruck) and Martin Kocher (University of Munich). Children act selfishly and will not extend their trust to others, nor will they honor any trust extended to them. Sutter and Kocher conducted an experiment with 662 people from 6 age groups—8-year olds through retirees—that is generally known as the “trust game”: Each test person gets \$10 and may decide how much of it he or she wishes to share with an unknown test person. The amount transferred to that other person is tripled by the test coordinators. The beneficiary has a choice to return a portion of the money to the original donor. Both players fare better when cooperating—the first party, though, only if confident that the second party will go along and share the gain. In the actual experiment conducted by Sutter and Kocher, if the first player donated all the money and the second player returned half of his take, each earned \$15.

As the two researchers established, trust and trustworthiness increase almost linearly with age. Eight-year-olds would part with no more than \$2 and in return got only \$.66 back, ending up with a loss of \$1.34. Sixteen-year-olds on average gave up almost half their money, but still lost \$0.30 in the bargain. Working adults gave away the highest amount—\$6.58—and received \$2.45 more than they spent. With retirees the numbers started to reverse a bit. “On average, trust is rewarded only among the adult population,” the authors concluded.

Advocates of traditional economics tend to argue that all those findings stand on shaky ground, as they are derived from role plays conducted in artificial lab environments and do not properly reflect real-life behavior. If larger sums were at stake in a real-life context, they argue, most of the phenomena contradicting the assumption of rationality would vanish. However, their argument is refuted by the results of a poll among 21,000 participants in the *Socioeconomic Panel*, an annual poll representative of the German population. Participants in this poll were given certain statements regarding a propensity for positive or negative reciprocity, and asked to what degree these statements applied to them.

A research team around the Bonn economist Armin Falk evaluated their replies and concluded that in real life, individuals fall into three groups: A majority will return favors of equal value, reciprocating mainly in positive settings. A minority will mainly reciprocate negative actions. In a third group the two traits are equally present. A *Homo oeconomicus*, however, who would return neither favors nor disfavor by equal measures, seems to be virtually nonexistent.

Not all groups cope with life equally well, the researchers found. Those living by the Old Testament’s avenger concept must reckon with substantial economic disadvantages—probably because they will have to overcome higher hurdles to enter into

and maintain social relations, the researchers surmise. Another reason may be that this type of individual is predisposed to react to unreasonable demands by superiors or coworkers in ways that will reflect badly on him. One of those reactions seems to be to skip work—individuals with an inclination toward negative reciprocity also have above-average absenteeism rates. On the other hand, those with a strong tendency to return favors at equal value earn a higher income on average than those of a more egotistical bent—and find themselves in the unemployment line less often.

## Arrival at Reality

For many years, only a small circle of experimental and behavioral economists was cognizant of these research findings; now these ideas are slowly making headway into more and more sectors of economic science. Financial market researchers, labor market specialists and human resource economists are coming to realize that traditional economics has been too simplistic in its assumptions on human motivation and behavior patterns.

To wit, portions of the current *labor market research* must be rewritten. Historically, neoclassical economists have maintained that the labor market is no different in its workings than the market in goods—and, for instance, higher performance incentives automatically lead workers to work harder.

More recent experiments and empirical investigations on the effectiveness of incentives indicate, however, that this is not always the case, since individuals do not exclusively think of themselves and intrinsic motives will sometimes be supplanted by extrinsic factors. This becomes especially evident from the analysis of so-called *relative compensation systems*, in which workers' earnings depend on their performance relative to their coworkers' performance. In theory, incentives under this system will be much higher than in a pure piece wage system, as

only those giving greater effort will earn above-average wages. Therefore, until recently, this type of income system was thought to be particularly suitable to promote greater output.

In fact, it is a downright performance killer. Extra-strong effort would mean cutting into coworkers' piecework, and thus into their wages. Most individuals do consider this, and consequently prefer going at a slower rate. Evidence of this can be found not just under laboratory conditions but also in real life, as was demonstrated by three labor market researchers using harvest helpers at a large orchard in England as an example. "We find the change in incentive scheme had a significant and permanent impact on productivity. For the average worker, productivity increased by at least 50 percent moving from relative incentives to piece rates," Oriana Bandiera, Iwan Barankay and Imran Rasul concluded in their study, which was published in the *Quarterly Journal of Economics*.

What's more, employers will rarely be able to measure the performance of their employees as accurately as in the case of those harvest workers. Due to a lack of reliable information they are usually left to guessing, as far as the commitment of their charges is concerned. "Nearly always, an employer will be dependent on the voluntary cooperation and willingness of his employees," explains Armin Falk. "Employees generally have ample discretionary leeway with regard to the commitment they bring to their work."

From the basic tendency toward *reciprocal behavior* we can conclude: When employees feel they are treated unfairly by their supervisors, their willingness to put more effort into their work than absolutely necessary will decrease. This kind of attitude can have very unpleasant effects for companies. For instance, as demonstrated by the Princeton professor Alan Krueger and Alexandre Mas from Berkeley, the massive quality problems occurring at the tire manufacturer Firestone in the mid-nineties, which cost the lives of dozens of drivers in the United States,

can probably be traced back to fierce labor unrest at one of the Firestone factories.

As a general rule, it is worthwhile for employers to take advantage of the human propensity to return benevolent treatment in kind. For instance, workers enjoying the trust of their superiors will exhibit a stronger commitment than those constantly under management's watchful eye. Evidence of this was established in a joint study by the Bonn researcher Falk and Michael Kosfeld of Frankfurt University. In a lab experiment, the two scientists simulated an intra-business labor market comprising 100 participants. One half acted as employees, the other as employers. Each employee received a salary and could decide for himself how much commitment to bring to his job. And just like in real life, doing work involved some degree of "negative utility," a cost. As salaries were decoupled from actual performance, the workers had an incentive to work as little as possible.

Employers had the option to set minimum standards of performance, or alternatively rely on employees to fully commit to the job without supervision. The noteworthy result of this study was: Employers waiving tight controls were rewarded with performance that was on average one-third higher. Those setting a minimum generally got just that much in return. Only a minority behaved as one would expect of *Homo oeconomicus*: A quarter abused the employer's trust and did no work at all. One out of five was not influenced one way or the other by how much trust or distrust he was shown, and exhibited relatively strong commitment. The majority, however, behaved in the reciprocal fashion explained before: In return for their salary, they voluntarily turned in an honest day's work. Once the employer instituted controls, employees' goodwill seemed to dissolve into thin air. They interpreted controls as a sign of distrust, and their productivity dropped.

## Macroeconomics in the Absence of *Homo Oeconomicus*

Even neoclassical macroeconomics could receive a jolt from the findings of behavioral economists—possibly even enabling Keynesianism to stage a comeback. At least that is the thesis put forward by economics Nobel laureate George Akerlof: In his 2007 presidential address at the annual meeting of the American Economic Association (AEA), Akerlof called for a paradigm shift in macroeconomics.

According to Akerlof, the assumptions regarding human behavior on which current macroeconomic models are based are far too restrictive and removed from reality, in particular since they completely disregard the fact that individuals do not always behave selfishly and rationally. “There is a sense in which those preferences are very narrowly defined. They have important missing motivation—since they fail to incorporate the norms of the decision makers,” Akerlof says. By taking account of such norms in the models, he argues, economists would arrive at a macroeconomic theory that heavily borrows from early Keynesian thinking. “Early Keynesians got a great deal of the working of the economic system right,” said Akerlof.

*Keynesianism* lost its cachet in the seventies, chiefly because its methods were thought to be out of date: Keynesian models used to be based on ad hoc assumptions about the economic behavior of players, rather than deriving macroeconomic interconnections from stringent assumptions about the behavior of individual consumers and entrepreneurs.

The *neoclassical economists*, by contrast, emphasized the so called “micro-foundation” of macroeconomics. Their basic conclusion was that government interventions in the economy are bound to be largely ineffective: Since individuals rationally striving to maximize their benefit in perfect markets will peg their consumption to their lifetime income rather than their

current income, any short-term tax relief or income raises will be neutral in their effect on private consumption.

The same is true for businesses, which in a neoclassical world will not let their investment decisions be influenced by their current cash flow. As the models do not make a long-term connection between the rate of inflation and the unemployment rate, neither monetary nor fiscal policies will exert a lasting influence on the real economy.

All these assertions are based on the assumption that the decision makers are intent on maximizing their monetary benefit. If, however, social norms were taken into account within the utility functions, all core insights of neoclassical macroeconomics would collapse, says Akerlof. For instance, the proposition denying a permanent link between inflation and unemployment is based on the assumption that people will generally focus on real instead of nominal values—which is not the case in the real world. Cuts in nominal compensation, for example, are exceedingly rare. “Employees have a *norm* for what wages *should* be,” stresses Akerlof. Even in times of crisis, he points out, businessmen will recoil from cutting wages out of fear that work ethics and staff loyalty will suffer. Norms also play a vital role in consumption and savings decisions. An important determinant of consumption is people’s idea of what they ought to consume, says Akerlof. In other words: Only if we deem an expenditure appropriate will we spend the money—even though we could afford to buy inappropriate things.

Why, then, have economists ignored social norms for decades? According to Akerlof, the late Milton Friedman (1912–2006) is to blame for that. In the late fifties, Friedman had conceptualized the postulate of “positive economics,” under which economists must use only objective, mathematically verifiable arguments in their models. “Current economic methodology inherently has created a biased economics,” says Akerlof, pointing out that the contemporary methods produced one-

dimensional economists blind to norms. To do away with those shortcomings, he demands a methodical reorientation of the discipline—in his view, the current “positive” economics should be replaced by a “naturalistic” one. The profession should put greater emphasis on case studies and closely monitor economic decision makers—rather than make abstract assumptions about the impulses of human behavior—in order to find out what motivates them.

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# 2

## The Pursuit of Happiness

It seems paradoxical: Between 1975 and 1995, the average real per-capita income in the United States rose by nearly 40 percent—yet Americans did not become any happier during that time. Despite plasma TV, PlayStation and a third car in the driveway, people are not one iota more satisfied with their lives than they were three decades ago.

The U.S. economist Richard Easterlin drew attention to this phenomenon as early as 1974. Today his observation is known in economic circles as the Easterlin Paradox. Not only in the United States but also in other industrialized nations, Easterlin observed that although today's generation is much more affluent than that of their parents and grandparents, people are no happier with their lives than they used to be. What could be the reasons for that? Traditional economists have dodged the issue for quite some time, as it hits them to the core.

After all, traditional economists start from the assumptions that we all strive to maximize our utility and that our utility increases with the money we have at our disposal and the opportunities for consumption open to us. If this was so, a generation with twice the income and wealth that their parents had should be much more satisfied with their lives.

Well, they are not. According to Easterlin's and other researchers' findings, only in poor countries does general life

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