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THE ECONOMICS OF THE CRISIS AND THE CRISIS OF  
ECONOMICS. LESSONS FROM BEHAVIORAL ECONOMICS

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## 1. Introduction

The economic crisis of 2008 and beyond occurred at a time during which the old neoclassical dominance was giving way to a pluralism of different research programs within economics. At the same time, the financial system that came tumbling down was based on neoclassical economics and its assumption of rational individual behavior and market discipline. In particular, the financial crisis was a direct consequence of the deregulation of financial markets that was urged by the neoclassical economic advocates of efficient markets (e.g. Schwartz, 2009, Kessler, 2010, Bresser-Pereira, 2010). For instance, Alan Greenspan, the former Chairman of the US Federal Reserve Board, noted in retrospect that 'I have made the error to expect that the self-interest of organizations, especially banks and others, was the best way to protect shareholders, capital, and business' (Greenspan, quoted in De Graaf, 2010, p.49). As such, the economic crisis also is a crisis of neoclassical economics, thus providing an extra impetus to the new research programs waiting in the wings.

Neoclassical economics is based on the so-called holy trinity of greed, self-interest, and equilibrium (Colander, Holt, and Rosser, 2004). Indeed, greed and the pursuit of self-interest are powerful human motivators. Adam Smith, the founder of economic science, however, argued in the eighteenth century that these human motives are not always morally objectionable. After all, they are the engine of the market while they were presumed to be kept in check by the market (Smith, 2003).

After a time, however, cracks appeared in this economic bastion. For instance, a series of simple illustrations showed that self-interest and social welfare do not always go together. For example, it would be better if we did not have to have insurance against theft, required no safes and alarm systems. Unfortunately, however, they are needed to protect us against the greed of others. In addition, there are negative externalities — an action of an economic actor comes at the expense of another without the latter being compensated — and it is debatable whether social welfare is served by the highest possible growth. Indeed, present climate and environmental problems demonstrate the importance of uncontrolled externalities.

The credit crisis has subsequently beaten gaping holes in the neoclassical economics bastion. For instance, although self-interest and greed are the engine of the market system, the credit crisis once again made clear that the market system equally depends on institutions which constrain and control its counter-productive effects. The market institutions have proven unable to suitably discipline powerful human motivations. This raises the question concerning the future of economics, not only of the institutions of the economy, but also of the future of the economic discipline. But before looking at the future, we will first revisit the past.

The following section briefly sets out what neoclassical economics consists of, and how the new research programs have adapted it. We pay special attention to behavioral economics as one of the most prominent new programs. In the third section, we discuss which fault economists of different theoretical inclinations have observed to have caused the crisis, and which solutions they have advanced to solve it. In the final section, then, we propose what we believe is an example of a promising behavioral eco-

conomic solution to help prevent future crises, the Default mortgage. The Default mortgage guards individuals against their bounded rationality while at the same time maintaining, if not enhancing, the welfare-producing capacities of the market.

## 2. From neoclassical dominance to pluralism

In the decades following World War Two the economic discipline was characterized by the dominance of one research program: neoclassical economics (e.g. Colander, Holt, and Rosser, 2004, Davis, 2003, Sent 2006). At the core of neoclassical economics stood the rational, self-interested individual who maximized the satisfaction of her preferences given her budget and given the prices of all the commodities. In this view, the budget was broadly defined to include not only income and wealth, but also (spare) time and whichever other resource that could be traded. Similarly, commodities included not only bread and bicycles, but also services, leisure, children, cultural identity and whatever else individuals could prefer to have or could prefer not to have (e.g. Wheelan, 2002). Because the individuals in the economy were on average rational in satisfying their preferences, the economy as a whole, i.e. the sum total of the individuals in the economy, would be in equilibrium. Equilibrium meant that the commodities had been distributed as efficiently as possible among the individuals in the economy given the individual preferences and budget constraints.

Starting around 1980 the dominance of neoclassical economics gradually faded and a pluralism of new economic research programs emerged (Davis, forthcoming). Most of these new research programs, however, were adjustments of the neoclassical program rather than fundamental rejections of it. Evolutionary economists, for instance, argued among others – as the name suggests – that the economy should be seen as resulting from a Darwinian process of selection in which the economy's equilibrium is not a static, fixed set of prices and preferences, but the outcome of a constantly changing environment (e.g. Nelson and Winter, 1982, Groenewegen, Spithoven, and van den Berg, 2010). Experimental

economists introduced the methodological novelty of market-experiments and argued that the rational equilibrium does not immediately emerge, but that the economy needs time to evolve towards the most efficient set of preferences and prices because individuals need time to adjust their behavior (e.g. Smith, 2008, Plott and Smith, 2008, Heukelom, forthcoming 2011). In addition, experimental economists argued that the eventual equilibrium depends not only on demand and supply, but also for example on the elasticity of demand and supply and the relative number of buyers and sellers (e.g. Smith, 1982, Plott, 1982). Institutional economists, for their part, emphasized how cultural specificities or institutions such as the law might constrain individuals to maximally satisfy their preferences, or on the contrary enable them to achieve a higher amount of welfare than would have been possible without those institutions (e.g. North, 2005, de Jong, 2009).

One of the most prominent new economic research programs has been behavioral economics (see Heukelom, 2010 for an overview). Behavior as a concept encapsulating all acts of the human being – and, more controversially, of the animal being – originates in the United States of the early twentieth century (Danziger, 1997). Subsequently, this new concept of behavior provided the basis for the label of the new approach to psychology baptized behaviorism (Mills, 1998). Behaviorism in its strictest sense is a scientific program commenced and developed by John Broadus Watson, Burrhus Frederick Skinner and others, which reigned American psychology in the 1920's and 1930's. In addition, behaviorism forms part of a broader characteristic of twentieth century American social science and society, namely to 'think behavioristically' (Mills, 1998, p.1, see also e.g. Ross, 1991). To think behavioristically is to equate 'theory with application, understanding with prediction, and the workings of the human mind with social technology' (Mills, 1998, p.2). Although behavioral economics does not directly relate to behaviorism, it is part of the twentieth century American focus on thinking behavioristically.

It was after World War Two that behavior's adverbial conjugation 'behavioral' was introduced in relation to 'science' and 'economics'. The usage of 'behavioral economics' was initially popularized at the University of Michigan's Survey Research Center in the late 1940's, where George Ka-

tona understood behavioral economics as investigating economic behavior, that is the sub-class of behavior produced in the course of the agent's activities in the economy (e.g. Festinger and Katz, 1953, Juster, 2004). Other users of the adverb 'behavioral' included Ward Edwards, also at the University of Michigan, who, starting in the late 1950's, employed it as the name of his branch of operations research called behavioral decision research (Edwards, 1954, 1961); and Herbert Simon, who from the late 1950's advanced what he labeled behavioral economics as an alternative to the dominant neoclassical school in economics (Simon, 1959, 1987). The label of behavioral economics was later picked up by economists who sought to reform the dominant neoclassical view of the day along the lines set out by Simon, establishing a to this day thriving, albeit non-mainstream economic research program. During the early 1980's, behavioral economics was furthermore claimed by the behavioral economics program of the Alfred P. Sloan and Russell Sage Foundations. Individuals involved in this program from the first hour included Amos Tversky, Daniel Kahneman, Richard Thaler, Robert Shiller, Lawrence Summers, and others. After a number of years in the margin of economics, this 'new' program of behavioral economics (Sent, 2004) became influential in the 1990's, and developed into one of the key contenders for replacing the no longer dominant neoclassical economic theory in the 2000's – as exemplified among others by Kahneman's Nobel memorial prize in economics in 2002 (Kahneman, 2003).

Observing these developments Abu Rizvi (1994b, p. 19n) noted that 'It is interesting that Simon's ideas were not used by mainstream theorists for years but have recently been "discovered".' And Herbert Simon (1992, p. 266) observed: 'Readers would not be deceived by the claim that economists flocked to the banner of satisficing man with his bounded rationality. The "flocking" was for a long time a trickle that is now swelling into a respectable stream'. In fact, Simon (1991, p. 385) had earlier lamented: 'My economist friends have long since given up on me, consigning me to psychology or some other distant wasteland'.

A central feature of behavioral economics has been its – to economists – new use of the term 'normative' and 'descriptive' (or 'positive'). Normative has been defined ethically in economics at least since the publication

of John Neville Keynes' *Scope and Method of Political Economy* (1890). In the normative domain one discussed what was good, fair, just, or ethical in other ways (Hands, 2001, p.30). Positive first of all meant not value-based, and secondly referred in a general sense to the empirical basis of a value-free science of economics. Behavioral economists, by contrast, introduced to economists the definition of normative as used by behavioral decision researchers, mathematical psychologists, mathematicians, philosophers and others, namely: normative as the rubric under which to discuss how one ought to behave if one wants to behave rationally. In addition, behavioral economists have claimed to be more empirically oriented than neoclassical economists (e.g. Camerer and Loewenstein, 2004).

In the early 2000's, the concept of bounded rationality was adopted from Simon and together with the concept of full rationality was employed to rephrase Kahneman and Tversky's normative–descriptive distinction. Gradually what was previously understood as the normative decision, now became the full rationality decision. Similarly, when the actual decision made by the individual deviated from the full rationality decision, it was now deemed boundedly rational instead of descriptive. In one clear sweep, Kahneman and Tversky's distinction between the concepts of normative–descriptive was replaced by concepts more appropriate in an economic context, while at the same time Simon was appropriated as an authoritative source for the use of these concepts.

During the same period, a distinction was drawn between the older and newer approaches to behavioral economics (Sent, 2004). In the 1960's, appeals to psychology on the part of behavioral economists were designed to develop an alternative to the mainstream model. Firmly rooted in its mathematical models, the mainstream exhibited little interest in these efforts. In the 1970's, cognitive psychologists, as stated above, suggested ways to incorporate behavioral insights in ways that provided less of a threat to the standard model. At the same time, the mathematical foundations of the mainstream started showing some flaws. In the 1980's, disagreements emerged between old and new behavioral economists, with the latter emerging as the victors in the 1990's, partly because Simon abandoned his efforts and partly because new behavioral economists sug-

gested ways in which their insights could be of help in rebuilding the mainstream stronghold.

Returning to the early 2000's, the normative-descriptive foundation of behavioral economics gave rise to a new perspective on welfare economics. For instance, behavioral economists discovered that people often save much less for their pensions than they should, and that when they do save, they do not diversify their portfolios optimally. Following on these results, programs have been set up to investigate how people can be induced to save more for retirement and better diversify their stock portfolios (e.g. Cronqvist and Thaler, 2004, Thaler and Benartzi, 2004). Another example concerns the use of medication. It has often been found that people who need to take drugs on a regular basis are very lax at doing so. Even when the risks are substantial and potential costs in terms of health very great, such as in the case of medication that reduces the chance of having a second stroke, people are very negligent at taking their medication properly. To solve this problem, programs have been set up that investigate how insights from behavioral economics can be used to design incentive mechanisms that induce people to take their medication (e.g. Badger et al., 2007). Finally, behavioral economists have turned their attention to development economics, with the purpose of using insights from behavioral economics to improve the functioning of development programs. It is for instance suggested that being poor is cognitively more difficult than not being poor, because the poor individual constantly has to weigh pros and cons of possible expenditures. As a result, poor individuals may be more susceptible to misleading information and be less cognitively capable of making long term decisions, simply because of the fact of being poor (e.g. Betrand, Mullainathan and Shafir, forthcoming a, b).

Behavioral economists have framed and defended this research in a number of closely related ways. Well-known is Thaler and Sunstein's (2003) 'Libertarian Paternalism', in 2008 followed up by Nudge, *Improving Decisions About Health, Wealth, and Happiness* (Thaler and Sunstein, 2008). Libertarian paternalism can be understood as a paternalism that does not restrict individual freedom of choice. Thaler and Sunstein distinguished

themselves explicitly from the traditional neoclassical stance towards welfare issues.

'We clearly do not always equate revealed preference with welfare. That is, we emphasize the possibility that in some cases individuals make inferior choices, choices that they would change if they had complete information, unlimited cognitive abilities, and no lack of willpower.' (Thaler and Sunstein, 2003, p.175)

In the behavioral economics paternalism debate, the justification for paternalistic policies has been the fact that decisions people actually make, their 'revealed preferences,' do not always match with their 'true' preferences. Behavioral economists have thus constructed a distinction between 'revealed' and 'true' preferences. However, this does not mean that preferences are context dependent. Rather, it means that it depends on the context and on the individual's willpower whether the true preferences can and will be revealed appropriately.

While behavioral economists were gaining prominence within the economics profession, the same cannot be said for the policy arena. Relying on the outdated image of the decision maker as self-interested and greedy and the idea that markets would align these interests in such a way that general welfare would be enhanced, policy makers introduced market mechanisms in a whole range of areas, including health care, telephone communication, and postal services. And it was also on the basis of this holy trinity of self-interest, greed, and equilibrium that financial markets were liberalized. The devastating results became clear in the credit crisis that erupted in 2008.

### 3. The economics of the crisis

Let us give a very sketchy overview of the events that led up to the eruption of the credit crisis. It all started in the American housing market. New forms of mortgages had been created, making it easier for people to qualify for a mortgage. With the rising housing prices, the idea was that it

had become less risky to give mortgages to people who could not afford them. After all, they could always refinance their mortgage based on the risen value of their home. These mortgages were labeled ‘subprime’ mortgages, because of the potential risks they carried, and are an illustration of a new technological and financial innovation. What made this innovation possible was the adjustable-rate mortgage, which allowed the home owner to choose among various monthly payment options, including the interest only option. This enabled more and more people to become home owners with mortgages whose risk was presumed to be reduced by the increasing housing prices.

This trend did not limit itself to mortgages, but was extended to loans as well. Consumers were given the impression that they could borrow money ‘without costs’. These loans were called NINJA loans, with NINJA referring to ‘No Income, No Job, or Assets’. It is clear that people with a low credit rating qualified for these loans. The risks associated with these mortgages and loans spread throughout the financial markets. Again, new technological and financial innovations played a role. Issuers of the mortgages and loans resold them to investment banks on Wall Street. The growth in lending that accompanied this gave an incentive to the lenders to give out as many mortgages and loans as possible, in an effort to earn more money with the issuing of the mortgages and loans. Wall Street bundled and repackaged these mortgages and loans in new financial products, the so-called securitizations.

The securitizations were subsequently resold as an investment opportunity. Because the mortgages and loans had been divided and repackaged, it was difficult to determine the underlying value of the loans and mortgages. This in turn made it difficult to quantify the risks of the securitizations. At the same time, they were presumed to be profitable investment opportunities because of diversification concerns, which led to a growing popularity for securitizations. As a result, the risks of the underlying mortgages and loans were spread throughout the entire financial system.

The whole financial system collapsed the moment interest rates started rising and housing prices started falling. People who were no longer able to pay their mortgages had to sell their homes. However, the falling hous-

ing prices no longer matched the size of the mortgages. Many home owners went bankrupt and turned their homes over to the bank, which was then left with homes that could not be sold and mortgages that were not paid. This suddenly made it obvious that the value of bundled and repackaged mortgages was much lower than had previously been considered. This changed into a virus that spread throughout the financial system as a result of the securitizations.

In an effort to halt the ‘subprime meltdown’ central banks pumped liquidity into the financial markets. The hope was that this would enable the mortgage issuers, banks, and hedge funds to continue their work. However, a snowball had been set into motion that turned into an avalanche: the falling housing prices and growing numbers of people defaulting on their mortgages led to bankruptcies in the financial system. As a result of the close ties within capital markets, the crisis quickly spread to Europe. Nobody knew which loans were toxic and which were not. Nobody wanted to lend money and encounter liquidity problems. A few financial institutions collapsed, and several were bailed out with government support to prevent the financial system from imploding.

The financial panic and constraints in turn led to a ‘great recession’ in the real economy, with many economies contracting at unprecedented speed (e.g. Reinhart and Rogoff, 2009, IMF, 2009). In response, many governments increased their spending in a classic Keynesian effort to prevent the great recession from turning into a new Great Depression. As a result, however, many governments started to run deficits that over the course of 2010 began to look increasingly unsustainable, at least as judged by the financial markets which by this time few economists still dared to call rational.

The bounded rationality that is central to behavioral economics is key to the two main narratives concerning the cause of the crisis, namely faulty policy making and faulty markets. Let us address these in turn.

## 3.1 Policy makers and the crisis

One set of arguments seeking to understand the onset of the crisis focuses on the bounded rationality of policy makers. In particular, their actions were myopic, focusing on the potential short-term gains, while neglecting the negative long-term repercussions. Jimmy Carter, Bill Clinton, and George W. Bush and their Community Reinvestment Act (CRA) stimulated subprime mortgages. That is, the CRA was adopted under Jimmy Carter in 1977 and forced banks to provide mortgages to risky minority groups. In 1995 this law was modified under Bill Clinton. Expanded in 2002, George W. Bush further stimulated the issuing of mortgages for minority groups so they could live the American Dream. However, when the circumstances changed, this turned into an American nightmare for both home owners and banks.

Moreover, under the leadership of Alan Greenspan the American central bank conducted a far too loose monetary policy with negative long-term repercussions. In an effort not to burst the bubble, huge amounts of money were pumped into the economy. Some of that money eventually made it to the U.S. subprime market. In his focus on the short run, the loose money policy seemed like a good idea, but in the long run the bounded rationality of this effort had devastating results. Also the Chinese policy makers were myopic in systematically keeping the value of their currency low. This created a trade surplus in China, which led to an inflow of large reserves of U.S. dollars that were subsequently invested in U.S. treasuries. This kept American interest rates systematically low, thereby reinforcing the loose monetary policy of the U.S. central bank. Again, this seemed like a good short-run strategy, but eventually led to a destruction of the value of the assets held by China (Schwartz, 2009, Kessler, 2010, Bresser-Pereira, 2010). In the Netherlands the importance of psychology for the economy was equally overlooked. Prime Minister Balkenende already talked about recession even before there was any economic downturn. Such talk about recession helped cause the boundedly rational consumers and producers to hold back on their purchases. It is therefore not surprising that the American National Bureau of Economic Research waits a few quarters before pronouncing on the economic cycle (van Ewijk and Teulings, 2009).

## 3.2 Markets and the crisis

Another set of narratives concerning the crisis blames the faulty functioning of financial markets. While individuals may in general be rational in their economic decision making, and while the market may often be the superior mechanism with which to organize the economy, the problem was that some institutions had been absent which should not have been absent, and that other institutions had not worked the way they should.

Indeed, the financial system that almost imploded was founded on a belief in free markets. The gradual deregulation that started in the United States upon the advice of Milton Friedman and others in the 1960's (e.g. MacKenzie, 2006, 2007, Reinhart and Rogoff, 2009, Cassidy, 2009) was based on the assumption that markets always produce the highest amount of welfare and that any law or other restriction reduced the welfare-creating powers of the markets. Also the integration of the European economies and the creation of the euro were partly based on the idea of rational markets. The belief was that markets in their rationality would judge government bonds of countries with higher current account deficits and budget deficits to be riskier than others, and would hence demand a comparatively higher interest rate on those bonds. In turn, this would induce the governments of those countries to reduce their deficits.

This belief in the market mechanism was inspired by New Classical macroeconomics, which is closely linked to neoclassical microeconomics. Scared by the experience of stagflation in the 1970's, New Classical economists embraced an unbridled belief in the rationality of man and the benefits of markets. Policy recommendations focused on structural matters, with the expectation of higher economic growth. The fluctuations in the economy were taken for granted. Not surprisingly, then, these economists had not seen the crisis coming (Krugman, 2009, Buiter, 2009, Stiglitz, 2010). With the credit crunch shattering these beliefs, policy makers en masse embraced the earlier maligned insights of John Maynard Keynes and thus an active role for fiscal policy in managing the fluctuations in the economy.

As noted earlier, the crisis erupted during a time in which microeconomics was no longer dominated by one, neoclassical paradigm, but by a pluralism of economic research programs. These research programs offered different assessments and suggested different solutions to the crisis. To neoclassically minded economists, the market was still the best economic system and individuals were on average rational. It was just that a few people had been so stupid to take on mortgages they could not afford, that some banks had not realized American individuals could simply walk away from the house they could no longer pay, and that some countries had failed to enact the proper systematic reforms of their economies (Ferguson, 2009). The solution, then, was to simply let the crisis do its work to teach the economic actors how to be rational (Posner, 2009, Shiller, 2008).

The crisis, however, showed that markets were unable to contain the boundedly rational behavior of individual agents. Agents who had sold the mortgages and bankers who had owned them had operated under incentive structures that had induced them to take on as much risk as possible. Credit rating agencies stimulated unrealistic optimism by giving out unrealistically optimistic credit ratings. Shareholders pushed banks to go for short-term gains at the expense of long-run financial health. Likewise, bonuses focused on the short-run stimulated bankers to take on excessive risks, since the potentially high gains were rewarded, while the likely losses were not held against them. And banks that did not go along with the unrealistic optimism that was sweeping the market were not performing as well as those heavily involved in the business of securitization. Moreover, banks that were considered too big to fail knew they would receive government support if things took a bad turn.

The problem, then, was that markets were unable to constrain these excesses. What may have been rational from a short-run, individual perspective turned out to be boundedly rational from a long-run, societal perspective. The contribution of behavioral economics to this narrative is the insight that the institutions that had been designed to enable and constrain the market's welfare-increasing mechanism might not always work as intended. In the opinion of behavioral economists, we need institutions that take into account the bounded rationality of individuals. Moreover, the fact that individuals' behavior deviates systematically and predictably

from the rational decision, implies that companies can take advantage of individuals. For instance, if consumers systematically underestimate the number of minutes they are going to use their cell-phones each month, cell-phone companies can run a profit by charging a high price for the minutes exceeding the number of minutes specified in the contract (Grubb, 2006). Consumers will not mind because they do not expect to exceed the amount of minutes of their contract, whereas cell-phone companies know that on average they will. Another example is the cost of cartridges consumers fail to take into account when buying a new printer (Epstein, 2006).

#### 4. Behavioral economic lessons

Behavioral economic solutions to the crisis are still a largely unexplored territory. This is partly because there is little attention for the bounded rationality of the consumer. After all, it is not possible to get 'the consumer' to appear in front of a national committee investigating the causes of the crisis. In addition, there are two psychological hurdles to drawing lessons from the crisis.

The first is a combination of the self-serving bias, fundamental attribution error, and actor-observer bias. The self-serving bias involves people attributing their successes to internal or personal factors but attributing their failures to situational factors beyond their control (Miller and Ross, 1975). If the crisis is beyond one's control, then there is no need to change one's behavior. The fundamental attribution error involves the tendency to over-value dispositional or personality-based explanations for the observed behaviors of others while under-valuing situational explanations for those behaviors (Ross, 1977). This explains why we all pointed to the bankers as the guys with the bad character traits. At the same time, we were reluctant to point to ourselves, which is related to the actor-observer bias, which causes us to stress situational factors when considering our own behavior (Jones and Nisbett, 1971). As a result of these biases and errors, bankers point their fingers at shareholders, credit-rating agencies, and central banks, who in turn point their fingers at policy makers, who

in turn point their fingers at bankers. This became painfully clear during the hearings of the ‘Commissie-De Wit’ in the Netherlands. And so we come full circle without drawing any lessons from the crisis.

The second is disaster myopia, which refers to the propensity to underestimate the probability of adverse outcomes, in particular small probability events from the distant past (Guttentag and Herring, 1986). As a result, for example, large groups of people choose to travel by car immediately after an airplane accident, but happily hop on the plane a year later. With the crisis seemingly disappearing rather quickly, the momentum for drawing lessons goes away. Thus, never waste a good crisis, but make sure to learn from it while you are in the middle of it. With much of fiscal policy focused on softening the effects of the crisis, the desire to tackle its causes evaporates. Worse, the focus subsequently moves to fixing the government budget, while myopically ignoring the serious blows it may receive in the future.

Despite these hurdles, it is not too difficult to see what implications derive from the behavioral economic position as sketched above. We will introduce what we think could be one promising behavioral economic policy proposal that might help prevent future crises. As the crisis started with mortgages, our example will also be about mortgages. From a behavioral economic perspective, the challenge of the crisis is to preserve what is good about the market while simultaneously taking into account the bounded rationality of economic actors. To that effect we propose the Default mortgage. The Default mortgage is a mortgage of which the contract is determined by the government. One could think of a mortgage not exceeding five times annual income before taxes, with a thirty-year life span, a fixed interest-rate, a linear repayment of the mortgage in thirty years, no backing by securities or bonds, a fixed fee for the agent selling the mortgage, and no life-insurance other than that determined by law. Of course, there is no such thing as a risk-free mortgage, and the exact parameters of the Default mortgage may be altered. Alternatively, one could design two or three different Default mortgages. The crucial aspect, however, is that the Default mortgages guard the individual as much as possible against his or her bounded rationality. In other words, the Default-mortgage is not a solution to an imperfection of the market-system

– the traditional reason for market intervention – but a solution to the bounded rationality of the consumers who operate in the market. As such, it derives from behavioral economic insights.

Once installed, banks and other providers may start offering the Default mortgage to consumers, but only under the rules set by the government. They compete on the interest rate charged as well as through their general service and reputation. In other words, the default mortgages ensures that the market can still do its welfare-enhancing work, but at the same time guards individuals against their bounded rationality. Mortgage providers still have an incentive to reduce their costs, so as to be able to reduce the interest rates charged, and equally have an incentive to increase their service to consumers and their reputation in general. Thus, under the Default mortgage, the mortgage-providers are still fully incentivized to maximize their profits, but the possibility of taking unfair advantage of individuals has been eliminated.

Another important feature of the market system is the freedom of the individual to choose the commodities s/he wants. To ensure the continuity of freedom of choice, we propose that in addition to the default mortgage, banks and other providers will be allowed to offer all the different types of mortgages as before. Individuals who are willing to take extra risk over and above the Default mortgage, or who for whatever reason argue a contract outside the default mortgage scheme to be superior, are hence free to do so. In that case, however, the responsibility for the contract’s parameters rests entirely with the bank and the individual taking the mortgage. Of course, the costs of the continuity of a maximum freedom of choice is that some boundedly rational individuals who should opt for the Default mortgage are lured into taking a mortgage outside the Default mortgage scheme. After all, some individuals are more aware of their bounded rationality than others. To minimize this cost the government could start a campaign promoting the default mortgage, require all mortgage providers to at least propose the default mortgage, or install some other form of discouragement.

Thus instituted, the default mortgage improves the functioning of the market system in a number of ways. First of all, it assures that firms can-



not take advantage of individuals' bounded rationality. This will increase the welfare of the individuals and marginally reduces the welfare of the banks issuing the mortgages. Hence, it increases the welfare created by the market. Second, it forces the banks and other providers to compete on interest rates and service, instead of on the mortgage contract that most disguises the true risks and costs. Third, despite its constraint on how the market operates, the Default mortgage ensures the freedom of choice. And last but not least, although zero risk is impossible, the Default mortgage scheme reduces the chance of a new mortgage-driven financial crisis.

## 5. Conclusion

Behavioral economics is one of the most prominent new research programs that have largely replaced the formerly dominant neoclassical paradigm. As the financial system that came tumbling down in 2008 was constructed on the basis of the neoclassical theories it is no more than natural to look at behavioral economics as one of neoclassical economics' contestants for answers to the crisis. From an economic perspective, the problem is that human self-interest – if not greed – provides the basis for the functioning of the market system but at the same time seeks to destroy the market system that allows it to flourish. The financial and economic crisis has once again emphasized that we need institutions that both allow and constrain the pursuit of human self-interest. This puzzle is further complicated by the only boundedly rational capacities of many, if not all of the consumers, managers, policy makers and so on who together make up the economy.

An example of such a post-crisis institution, inspired by behavioral economics, is the Default mortgage. The essence of the Default mortgage is that it specifies in which domains the self-interested market actors are allowed to pursue their self-interest, and in which domains they are not allowed to do so. As such, the Default both guards boundedly rational individuals against their limited capacities, while at the same time maintaining, if not enhancing, the welfare-producing capacities of the market.

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