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THE PSYCHOLOGY OF FINANCIAL CRISES

Abstract

Traditional economic theory has tried to explain speculative bubbles as the result of rational economic behavior – and has failed. This calls for the integration of socio-psychological patterns, which allow capturing irrational behavior in economic analyses. The paper suggests four fundamental psychological pitfalls derived from the theory of cognitive dissonance, which might be at the roots of the present financial crisis and which should better not be ignored by monetary policy makers.

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Introduction

If investors had followed Egon Sohmen (1930–1977), the current financial crisis would never have happened. He was deeply convinced that financial markets are inherently stable and that speculation has a fundamentally stabilizing effect on markets. In his opinion, speculative bubbles like we have seen recently first in real estate markets and then in stock and commodity markets are disturbances that automatically and quietly rectify themselves.

His line of argumentation still sounds convincing today: When the market value of an investment tends to fluctuate around its fundamental value in long-term average, then it is more probable that price changes will move the market value closer to the fundamental value than away from it. Speculators who wait for increasing gaps between market value and fundamental value will, on average, take a loss. However, speculators who wait for decreasing gaps between market value and fundamental value will earn a profit, and their purchases will support the movement of the market value towards the fundamental value. The upshot of this line of argumentation is that speculators who earn a profit tend to stabilize market values, whereas speculators who take a loss tend to automatically disappear from the market because they run out of money.

How can economists contribute to explaining phenomena such as the current financial crisis when economic theory clearly maintains that such phenomena are impossible to occur? To foreclose the answer: this paper argues that traditional economic theory needs to be supplemented by insights derived from social psychology - insights that explain human behavior much more realistically than economic theory does. This paper thus moves into the territory of behavioral economics, which has developed very dynamically in recent

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years, but which has probably been given too little attention when analyzing the current financial crisis.

Are Financial Markets Rational?

The line of argumentation that speculation stabilizes markets is known in the literature on financial markets as the efficient market hypothesis. However, its foundation is not considered to have been laid by the Austrian Egon Sohmen in his book published in 1981, but by the American Eugene Fama in his seminal article published in 1970. The literature that builds on this hypothesis differentiates between three different versions:

- The weak version, in which past price movements do not allow conclusions about future price movements to be drawn. Thus, speculation based on chart analysis is ineffective.
- The middle version, in which current prices reflect all publicly available information about a certain investment. Thus, fundamental analysis is also ineffective.
- The strong version, in which prices reflect not only publicly available, but also any other information of all market participants. Thus, not only are chart and fundamental value analyses ineffective, so is insider trading.

All three versions have in common that they stand on a weak empirical footing. Many different pieces of evidence could be cited here. But, above all, the efficient market hypothesis posits that speculative bubbles cannot occur, which nobody believes any more after the new economy boom of 1999–2001 and the real estate and stock market bubble that burst in 2008.

Economists have a difficult time abandoning the efficient market hypothesis because this would imply to abandon the core hypothesis of all modern economic theory, namely, that economic agents behave rationally, at least on average over time and across various agents. Ultimately, this means "Homo economicus" would have to be retired, which would question the theoretical foundations of both microeconomics and neoclassical macroeconomics.

Thus, there have been several attempts to save the efficient market hypothesis by positing the existence of "rational bubbles." Rational bubble models themselves are, however, not really convincing, especially since they all assume that the probability that a bubble will burst does not depend on its size, that is, does not depend on the divergence between market value and fundamental value. They further assume an infinite time horizon, as bubbles would otherwise collapse as a result of backward induction (see LeRoy, 2004).

At best, one might hypothesize that the performance and remuneration of funds managers is not determined by the absolute performance of their funds, but rather by the performance of their funds relative to a general index ("beating the index"). Then, it could be profitable for them to "ride the bubble," that is, to not pull out of the market before other market participants when a bubble starts occurring. When the bubble bursts, their losses would not exceed the losses of their competitors and they would still have a chance of beating the index. In this version of rational bubbles, the funds managers would, after all, behave rationally. However, the question would remain why rational investors could entrust their money to funds managers who are only interested in relative performance, and not in absolute performance. Thus, even this version of rational bubbles cannot dispense with irrational behavior. It is merely shifts irrationality from funds managers to investors.

Homo Economicus and Homo Sapiens

The discrepancies between the assumption of rational behavior upon which the predictions of traditional economic theory build and what actually happens in financial markets are so glaring that economists are increasingly willing to retire Homo economicus, at least partially. Thus, behavioral finance attempts to take into account the fundamental insights derived by psychology in order to predict human economic behavior. This expansion of the economic horizon has not been restricted to financial market analyses. It has also served as the basis for the relatively young discipline of behavioral economics (Rabin, 1998). The pioneering work in this regard was done by David Kahneman and Amos Tversky, who developed the so-called prospect theory, for which Kahneman was awarded the Nobel Prize in 2002. This theory is based on a new utility function that assumes that consumer's utility does not depend on the absolute quantity of available consumer goods, but rather on changes in quantity. In addition, it assumes that negative changes (losses) are weighted more heavily than positive changes (profits). As Kahneman and Tversky (1979) have demonstrated, these assumptions are well founded by empirical socio-psychology (for a critique of prospect theory through the eyes of a psychologist, see Schmook et al. 2002).

The popularity of behavioral economics was strongly promoted by the book of Akerlof and Shiller (2009), which emphasizes the importance of "animal spirits" for understanding economics. They chose this term, which they borrowed from John Maynard Keynes, to illustrate that human behavior is to a great extent driven by animalistic instincts rather than by rationality. Behavioral economics is, however, still far from having an empirically firm micro fundament. Up to now, measurable success has been confined to behavioral finance, where socio-psychology has contributed to the revival of chart analysis.

The problem with integrating socio-psychology into traditional economics is that progress in economics is all too often considered as progress in modeling economic processes consistently. "Consistently" in this respect means to avoid any inconsistencies in each analytical step, which, in turn, are all based on the assumption of rational behavior. Economic models are thus not able at all to cope with irrational behavior. "Economics has thus, by its methodology, tied its own hands" (Lux and Westerhoff 2009).

To solve this problem, it will not suffice to arbitrarily replace the "rational agents" of current economic models by "irrational agents," as this would make the models arbitrary and meaningless. Thus, there still are many respectable economists who view behavioral economics very skeptically, and advocate remaining faithful to the tried and tested Homo economicus in spite of the fact that he obviously does not reflect reality well. Eugene Rama, for example, calls behavioral economics a crowd of anomalies that has nothing in common with a scientific theory.

Pitfalls

Criticism of the shortcomings of behavioral economics is without doubt justified. However, it cannot be denied that extensive experimental research and the opening up of economics to socio-psychology have revealed certain patterns that make the irrational behaviors frequently involved in economic decision-making at least somewhat predictable. In the far future, these patterns might well form the basis of a new theory that could be as consistent in itself as neoclassical utility theory (see, for example, Ariely 2008). Since irrational behavior runs counter to the individual economic agent's own interests, they can be considered "pitfalls" - pitfalls that would not happen to Homo economicus. For a better

understanding of speculative bubbles in general and the current financial crisis in particular, four such pitfalls seem to be especially important:

Pitfall 1: We tend to overestimate our own skills. Thaler (2000) relates how almost all of his students expect to do better than the average at the beginning of a semester and how approximately half of them are disappointed at the end of the semester.

Pitfall 2: Once we have made a decision, we tend to pay greater attention to information that supports the decision than to information that questions it. This pitfall, which was first described by Brehm (1956), is called *post-decisional dissonance* by socio-psychologists. It causes us to correct mistakes too late.

Pitfall 3: As the above-mentioned prospect theory emphasizes, we tend to give losses greater weight than gains. This *loss aversion* is much more pronounced than would be consistent with rational risk aversion. According to Kahneman and Tverski (1979), the asymmetry is even 3:1, which means that it takes a gain of 300 dollars to cancel out the dissatisfaction caused by a loss of 100 dollars. As a direct consequence of this pitfall, we want to keep goods we have bought, selling them only if we can get a much better price than the one we originally paid. Therefore, this effect is also known as *endowment effect* (Knetsch 1989).

Pitfall 4: After a certain event, we often have the feeling that we knew it was going to happen even though we cannot possibly have known it was going to happen. This effect is labeled as the *curse of knowledge* by Thaler (2000). Socio-psychologists call it the *hindsight effect* or the *knew-it-all-along effect* (Fischhoff and Beyth 1975). It not only causes us to overestimate our ability to predict events, but also prevents us from learning from previous false predictions because we convince ourselves that our previous predictions were correct.

A common denominator for these pitfalls is provided by the *theory of cognitive dissonance*, which was developed by Leon Festinger (1957) and which Frey and Gaska (2002) justifiably call one of the most influential of all socio-psychological theories. It states that we try to avoid contradictory cognitions (of ourselves and/or our environment) or at least to reduce the dissonance between contradictory cognitions. In *Pitfall 1*, we reduce the dissonance between our own idealized cognition of our abilities and our actual abilities by overestimating these abilities. In *Pitfall 2*, dissonant information is filtered out, while consonant information is given greater cognitive attention. In *Pitfall 3*, the value we attach to things we have bought confirms the soundness of our decision to buy them, thus preventing a dissonance between the value we attach to these things before and after we buy them. In *Pitfall 4*, we reduce the dissonance between our expectations and actual events by changing our expectations retroactively to conform to reality.

All in all, it could be imagined that the theory of cognitive dissonance will once become as important for behavioral economics as it is already today for socio-psychology. (But, of course, this prediction rests upon the assumption that behavioral economics itself is more than just a speculative bubble.)

The Financial Crisis

For the purpose of this paper, the origins and course of the global financial crisis can be outlined as follows:

- The starting point was an extremely expansive monetary policy that began in the United States in the late 1990s and continued in the wake of the dotcom bubble on into the early 2000s, also spreading to Europe.
- Monetary expansion was followed by a surge in inflation, albeit not in goods markets but in asset markets. The first of these markets to be affected were real estate markets (although not in all countries), then stock markets followed, and finally commodity markets were affected.
- Additional liquidity was infused into financial markets by the explosion in the supply of derivatives, which was fostered by a far too permissive regulation of financial markets. This pumped up the speculative bubbles even more.
- The real estate bubble burst first. It burst because ever riskier financing models caused private real estate owners to default on their real estate loans. As a result, the solidity of other asset-backed securities and other derivates began to be doubted, which caused the speculative bubbles in the stock and commodity markets to burst too, and ultimately threw the global financial economy into a spin.

In the katzenjammer that followed, the blame for the crisis was placed primarily on the deregulation of financial markets and on rating agencies, whereby the agencies were accused of giving euphorically high ratings to extremely risky derivatives.

On a descriptive level, these accusations are quite convincing. But they ignore several fundamental issues: Why were banks and investors far too willing to accept adventurous derivative securitization schemes and buy products they did not really understand? Was, concomitant to deregulation, the lifting of the restrictions on dealing in extremely risky "credit substitutes" sufficient reason to actually accept such risks? Why were investors so willing to believe the hype of the rating agencies although it was well known that these agencies were on the payroll of the issuers of derivatives. Why did banks ignore their own early warning systems in order to participate in spinning the gambling wheel of speculation? Those who blame deregulation and rating agencies as the major originators of the financial crisis are making things too easy for themselves.

To state it differently: Homo economicus would never have made all these mistakes. He would have become highly suspicious when real estate prices skyrocketed; he would have realized that excessive expansion of money supply can only generate profits on paper; he would have been skeptical of ratings given by rating agencies that rate their own, paying customers; and he would have seen no reason to stop using his own tried and true methods of analyzing and assessing risk. He would perhaps have been glad about all the additional opportunities resulting from the deregulation of financial markets and related financial innovations. But he would not have blindly and recklessly jumped at all of these opportunities.

Homo sapiens, however, ticks differently:

- When a speculative bubble begins to build up, *Pitfall 1* causes her to believe that she will be able to make money on the bubble and then pull out before everyone else, before the bubble bursts.
- After investing in speculative markets, he only takes notice, because of *Pitfall 2*, of information that justifies his decision to invest, even becoming susceptible to the siren songs of the rating agencies, although he would otherwise have plugged his ears to such songs.

- Even when a bubble starts to deflate and prices start falling, she does not, because of *Pitfall 3*, quickly pull out of the market, because she considers her own assets to be particularly valuable.
- And after all the bubbles have burst, and everything is all over, he does not, because of *Pitfall 4*, learn from his mistakes, because he convinces himself that he saw the bursting of the bubbles coming all along and thus will have everything under control when new bubbles occur.

Those who are willing to take Homo sapiens seriously and who do not let themselves be fettered analytically by the rationality postulate do not at all consider the occurrence of gigantic speculative bubbles and the financial crisis triggered by their bursting to be inexplicable. They also have the unpleasant feeling that this crisis will most likely not be the last one, and that the whole game of riding the bubble will begin anew in the foreseeable future.

Conclusions

The main consequence of the line of argumentation put forward in this paper is that it will not be easy to prevent a repeat of global financial crises through economic policy. Better global governance and internationally coordinated regulation could of course help to prevent excesses in the markets for derivatives, but neither will diminish people's willingness to fall for speculative bubbles. The only preventative measure that will work seems to be to deprive bubbles of inflationary gases from the very beginning by controlling the supply of liquidity better than has hitherto been the case.

Apparently, central banks, when implementing their monetary policies, have been too focused on price trends in goods markets, while paying less attention to asset price bubbles. To prevent future financial crises, they will have to take better responsibility for inflationary developments in asset markets by implementing monetary policy instruments of all types to nip bubbles in the bud.

For an economist, the consequences for the future of economic theory are at least as exiting. First, there should be no doubt any more that speculative bubbles can only be understood by taking recourse to socio-psychological insights. The speculative excesses in asset markets were simply too large to be explained by using rational bubble models. The most adamant advocates of Homo economicus still manage to fit these excesses into their rational models somehow, but their models are reminiscent of the Ptolemaic system of the universe, which was still using complicated formulas during the Renaissance to fit the orbits of the planets into a geocentric system although Copernicus, Keppler, and Galileo had already greatly simplified things by using the heliocentric system.

Second, behavioral economics has evolved into more than just an anecdotal collection of behavioral anomalies, even if it is still far from being able to provide stringent micro-based models. However, the theory of cognitive dissonance could play a key role in developing such models. It is theoretically rigorous and it seems powerful enough to provide a theoretical framework for capturing patterns of irrational behavior such as the ones outlined in this paper.

References

Akerlof, G. A./Shiller, R. J. (2009), Animal Spirits. How Human Psychology Drives the Economy and why it Matters for Global Capitalism, Princeton.

Ariely, D. (2008), Predictably Irrational, New York.

Brehm, J. W. (1956), Postdecision Changes in the Desirability of Alternatives, Journal of Abnormal and Social Psychology 52, 384–389.

Fama, E. (1970), Efficient Capital Markets: A Review of Theory and Empirical Work, Journal of Finance 25, 383–417.

Festinger, L. (1957), A Theory of Cognitive Dissonance, Stanford.

Fischhoff, B./Beyth, R. (1975), „I Knew it Would Happen": Remembered Probabilities of Once-future Things, Organizational Behavior and Human Performance 13, 1–16.

Frey, D./Gaska, A. (2002), Die Theorie der kognitiven Dissonanz, in: Frey, D./Irle, M. (Hrsg.), Theorien der Sozialpsychologie, Band I: Kognitive Theorien, Bern, 275–324.

Kahneman, D./Tversky, A. (1979), Prospect Theory: An Analysis of Decision under Risk, Econometrica 47: 263–291.

Knetsch, J. L. (1989), The Endowment Effect and Evidence of Nonreversible Indifference Curves, American Economic Review 79, 1277–1284.

LeRoy, S. F. (2004), Rational Exuberance, Journal of Economic Literature 42, 683–804.

Lux, T./Westerhoff, F. (2009), Economics Crisis, Nature Physics 5, 2–3.

Rabin, M. (1998), Psychology and Economics, Journal of Economic Literature 36, 11–46.

Schmook, R./Bendrien, J./Frey, D./Wänke, M. (2002), Prospekttheorie, in: Frey, D./Irle, M. (Hrsg.), Theorien der Sozialpsychologie, Band III: Motivations- und Informations-Verarbeitungstheorien, Bern, 279–31.

Sohmen, E. (1961), Flexible Exchange Rates: Theory and Controversy, Chicago.

Thaler, R. H. (2000), From Homo Economicus to Homo Sapiens, Journal of Economic Perspectives 14, 133–141.