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Behavioral finance revolution and the financial regulations and policies

Opening Remarks

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The legitimacy of including behavioral economics in the mainstream economic thinking has sharply increased in the last few years.[1] Behavioral-based books are in the best-seller list in many countries; behavioral analyses are part of the standard curriculum in most graduate schools; most recently, the Nobel Prize committee attributed this year the prize to Richard Thaler, for "integrating economics with psychology".[2]

But we must go further. There is a widely perceived need for economic studies that explore the real human behavior, especially after the global financial crisis hit the world ten years ago.[3] The simplifying assumption of a rational and self-interested agent has proved insufficient to explain the systematic deviations that have contributed to the crisis.[4]

Of course there is a long tradition of studies on individual behavior, tracking back to Simon's seminal 1955 contribution and his 1957 book aptly named "Models of

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[1] See DellaVigna Stefano, 2009. "Psychology and Economics: Evidence from the Field". *Journal of Economic Literature*, 47, 315-372, for a survey of academic literature; Driscoll John C. and Steinar Holden, 2014. "Behavioral economics and macroeconomic models", *Journal of Macroeconomics* 41 (2014) 133-147, for a discussion on how the behavioral findings have informed macroeconomic modeling; Lunn, Pete, 2014. "Regulatory Policy and Behavioural Economics", OECD Publishing, Paris, and OECD, 2017. "Behavioural Insights and Public Policy. Lessons from Around the World", OECD Publishing, Paris, for wide ranging examples and analyses on the application of behavioral insights to public policies.

[2] The Committee for the Prize in Economic Sciences in Memory of Alfred Nobel, 2017. "Richard h. Thaler: integrating Economics with Psychology", Scientific Background on the Sveriges Riksbank Prize.

[3] See for example Hendry David and John Muellbauer, 2017. "The future of macroeconomics: Macro theory and models at the Bank of England," *Economics Series Working Papers 832*, University of Oxford, Department of Economics and the literature quoted there.

[4] See the account in Gorton Gary B., 2010. "Slapped by the Invisible Hand. The Panic of 2007", Oxford University Press.

Man".[5] Allais, Ellsberg and others [6] detected the fundamental limits of the economists' particular model of man. But for many years the economic discipline, while fully accepting those insights, considered them as just a useful warning that economics does not deal with real human beings but with simplified representations.

We now believe that economic models, especially when used to inform policymaking, should also be robust to the real human beings behavioral traits. Limited ability to process the information, aversion to losses, endowments effects, social preferences could all imply that policies deemed sub-optimal in the standard neoclassical settings are in fact the most appropriate. This could be true also when recognizing the richness and flexibility of the fully rational agents based theories.[7]

Behavioral economics has also entered the core business of central banks: monetary policy. As Janet Yellen put it some years ago: "*Individuals have money illusion, follow heuristic rules of thumb, and care about issues like fairness and equity... theories built on behavioral foundations have strikingly different implications from those predictions that follow from more standard theories*".[8] Importantly, behavioral considerations have become also part of the general discussion on the role of expectations in economic

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[5] Simon, Herbert A.1955. "A Behavioral Model of Rational Choice", *Quarterly Journal of Economics*, vol. 69, 99-118; Simon, Herbert A., 1957. Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting, John Wiley, New York.

[6] Allais, Maurice,1953. "Le Comportement de l'Homme Rationnel devant le Risque: Critique des Postulats et Axiomes de l'Ecole Americaine."*Econometrica* 21, 503-546 and Ellsberg, Daniel, 1961. "Risk, Ambiguity, and the Savage Axioms, in *Quarterly Journal of Economics*, vol. 75, n. 4, pp. 643-669.

[7] See for example the discussion in Gul Faruk and Wolfgang Pesendorfer, 2008. "The Case for Mindless Economics" in Caplin Andrew and Andrew Schotter, Eds. "The Foundations of Positive and Normative Economics", Oxford University Press.

[8] Yellen, Janet, 2009. "Implications of Behavioral Economics for Monetary Policy", in Christopher L. Foote, Lorenz Goette, and Stephan Meier Eds. 2009. "Policymaking Insights from Behavioral Economics", Federal Reserve Bank of Boston.

theory, especially in times of high uncertainty.[9] Recently De Grauwe and Ji have proposed macroeconomic models where agents are not sophisticated enough to formulate rational expectations, and are therefore forced to adopt simpler heuristics to forecast the future.[10] Depending on a range of parameters the policy trade-offs faced by central banks can be actually different from those based on standard models.

Finance is an obvious field where to apply behavioral insights. Financial services are in fact often complex, involve trade-offs between the present and the future, require an assessment of risk and uncertainty, and the decisions are sometimes not repeatable, so that people can not learn from their own past experience.

The "behavioral finance revolution", as it has been labelled, has opened the way to a more integrated approach to the analysis of economic phenomena.

Consider households' financial decisions. Heuristic thinking, which is people's tendency to use simplistic rules to take complex decisions, has emerged as one of the main explanations for why people concentrate their investments in few assets (portfolio under-diversification)[11] or for why many households over-pay for their bank accounts, keeping old and expensive tariffs when their bank has made cheaper options available to them.[12] The predisposition to simplify decisions can also explain the

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[9] Visco, Ignazio, 2009. "On the role of expectations in Keynesian and today's economics (and economies)". International Conference on "Gli economisti postkeynesiani di Cambridge e l'Italia", Accademia Nazionale dei Lincei.

[10] De Grauwe, Paul and Yuemei Ji, 2017. "Structural reforms and monetary policies in a behavioural macroeconomic model", *CEPR Discussion Paper* n. 12336.

[11] Benartzi, S and R Thaler, 2001. "Naive diversification strategies in defined contribution savings plans", *American Economic Review* 91:79-98.

[12] Stango Victor and Jonathan Zinman, 2009. "What Do Consumers Really Pay on Their Checking and Credit Card Accounts? Explicit, Implicit, and Avoidable Costs," *American Economic Review*, vol. 99(2), pages 424-429; Branzoli Nicola, 2016. "Price dispersion and consumer inattention: evidence from the market of bank accounts". *Working Papers of the Bank of Italy* N. 1082.

propensity to over-borrow, to under-save and to favor shorter debt maturities, all phenomena observed in households' borrowing decisions.[13]

Financial intermediaries may have an incentive to exploit consumers' biases. Let me give you an example, referred to the US subprime mortgage market. In the run-up of the crisis, advertisement "framing" was used by many banks to increase their business: low initial interest rates were frequently publicized with much more evidence than the higher rates that would inevitably follow.[14] The rational *homo oeconomicus* would have not be tricked by such strategies, while the main street guy was.[15]

A deeper understanding of how investment and saving decisions are made and why people make predictable mistakes when choosing financial services is therefore crucial to achieve an effective financial consumer protection.

The financial industry, the banking industry in particular, is rooted in trust: financial intermediaries have to be trusted by those, millions and millions of individual savers, giving money to them. Trust is based on the stability and transparency of financial intermediaries: because people's trust is a public good, public authorities have to protect savers on both fronts. I do not want to enter here the debate whether a single supervisory authority should be charged of both missions, or whether we need two. What the economic literature and the international experience have shown is that laws and rules are not enough.[16] There is more. Savers do not usually have the knowledge to really understand the characteristics of the

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[13] Stango Victor and Jonathan Zinman, 2009. "Exponential Growth Bias and Household Finance", *The Journal of Finance* 64(6), pp 2806-2849.

[14] For a general overview of how the presence of biased consumers may affect firms' pricing decisions, see Grubb Michael, 2015. "Failing to choose the best price: theory evidence and policy" *Review of Industrial Organization*, 47(3), pp.303-340.

[15] Gurun Humit G., Gregor Matvos and Amit Seru, 2016. "Advertising expensive mortgages", *The Journal of Finance* 71(5), pp. 2371-2416.

[16] OECD, 2017. "Behavioural Insights and Public Policy: Lessons from Around the World", OECD Publishing, Paris.

financial products they buy, even when they are clearly explained to them. But also when they do, their decisions might not be fully rational.

Financial education is key in both respects. The initiatives of financial education, for students and for adults, promoted by the Bank of Italy take now more into account behavioral considerations. We try to increase savers' basic concepts and at the same time to help them make rational choices in accordance with their true needs. For instance, this year we involved about one hundred teenagers in a role play whose aim was to make them aware of their mistakes and irrational behaviors.

It is hard to precisely estimate how pervasive behavioral biases are in the population, but we have some piece of evidence suggesting that they are actually quite common.[17] A survey conducted by the Bank of Italy at the beginning of this year shows that almost a fourth of the Italian adult population are overconfident, which means they overestimate their actual knowledge of basic financial concepts.[18] In other developed countries this percentage is even higher. Overconfident savers face a significantly higher risk of making bad investments, and overconfidence is just one of the relevant biases!

New technologies can affect those biases. On the one hand, they bring risks that are not completely understood yet. For instance, being able to buy a financial product using a single click on my smartphone may exacerbate my short-termism, self-control problems and confirmatory bias.[19] On the other hand new technologies offer an opportunity: for instance, digital practices may induce savers into "good" action, through automated reminders to save or to pay back a loan, or a better price/product comparison.

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[17] See DellaVigna Stefano, 2009.

[18] Banca d'Italia, 2017. "Annual Report for 2016", pp.84-87.

[19] See OECD, 2017. "G20/OECD INFE Report on ensuring financial education and consumer protection for all in the digital age", OECD Publishing, Paris.

Anyway, laws and regulations must be an important part of the picture. We may think of many: nudges, default options, framing disclosure, cooling off periods, and also restrictions to consumer choices. Such interventions entail an increasing degree of intrusiveness and they have different welfare implications. Nudges, defaults and disclosure requirements usually benefit not-so-rational consumers without imposing costs to rational agents: they in fact help the former to make the right choice, for instance overcoming the framing effect, but they do not change the actual decision of the latter. Restrictions to consumer choices, such as limitations to product selling, imply a trade-off between the protection of vulnerable savers and the costs imposed to rational ones.[20] But there could be circumstances that justify, with well-founded reasons, these costs.

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Let me conclude. Economic theory is a simplified representation of the world and it should be considered as a tool to increase human welfare offering good predictions and supporting the decisions of policy makers. During more than three decades of fierce debate, behavioral economics has influenced the way we think about real-world phenomena and design economic policies. It still has some opponents. However, the question is not whether behavioral finance should replace the standard theory, but whether the debate between behavioral and "traditional" economists improves our understanding of the real world, and provides policy makers with more effective tools.

Stimulating this debate is precisely the goal of seminars like this one!

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[20] John Y. Campbell, 2016. "Restoring Rational Choice: The Challenge of Consumer Financial Regulation" *American Economic Review*, American Economic Association, vol. 106(5), pp. 1-30, May.

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