

*Academic Views***Nabi Rustamli & Gulnara Abbas**

The aim of this paper is to present general information and recent trends of Behavioral Economics. Additionally, we endeavored to briefly draw relevant parallels with operations of central banks and behavioral finance. It also conveys predictions of academicians about the future role of psychology in public policy.

Standard approach in classical economics have historically emphasized on rational expectations model developed by J. Muth. According to this model, agents' actions are directed to maximize their utility (or profit), which is also known as "maximizing behavior" [1] and their preferences are assumed to be time-consistent and independent of the framing of the decision. [2] However, as Cuthbertson outlines it, the aforementioned approach has serious flaws and the fields like behavioral finance should be more thoroughly explored and implemented by policy makers as well as theorists. [3] Furthermore, it is argued that central bankers have already recognized deficiencies of the theory and rely more on monetary policy framework based on judgment, transparency and inflation targeting. Laboratory experiments conducted by numerous scientists revealed the series of cases contradicting with the classical theory: individuals are time-inconsistent, they violate rational expectations by overestimating their own skills, are affected by transient emotions in decision-making process. Main deviations from classical model were categorized as 1) non-standard preferences, 2) incorrect beliefs, and 3) systematic biases in decision-making. [4]

Psychologists and brain scientists have already documented the limitations of individual cognition. Thus, it's now a widely held view that these cognitive restrictions of individuals compel them to employ simple rules, in other words, heuristics to guide their behavior, that doesn't stand for their irrationality, but rather the complexity of the world itself. Additionally, there's considerable literature of behavioral finance models, incorporating the idea that agents are bounded with their cognitive limitations and therefore, are inclined to use heuristics not only in their actions but also in forecasting. [5]

Economics has always been instrumental in shaping policy recommendations, but painfully psychology by itself cannot be considered to be applied properly. Still it's hardly viable to discard and assume away the existing long-standing link between these two disciplines. So, if both to be applied side by side, potential outcomes for public policy is more likely to appear desirable and advantageous. [6]

Emotions and even minor mood manipulations were proved to be significant factors affecting the behavior and decisions of individuals. Mood changes resulting from fluctuation in weather have affected the returns on stock market. [7] Furthermore, effect of international football matches on the stock returns was investigated by Edmans and revealed significant correlation. [8]

Monetary Policy as a Behavioral Science

The notion "animal spirits" was introduced by J. M. Keynes, signifying waves of optimism and pessimism observed in consumers and investors, in regard with their decisions about output and investment. But latest DSGE models, which bring together

a new Keynesian framework of wage and price rigidities with rational expectations hypothesis, somehow discard the role of optimism and pessimism in this regard. Rational expectations assumption states that, agents are able to comprehend the distribution of shocks and the “truth”. [9]

Nobel Prize winning economists Amos Tversky and David Kahneman developed behavioral Economics as a field of study. Interestingly, in contrast to rational expectations model, agents in the behavioral model cannot quite fathom the true nature of shock nor its transmission. Though they endeavor to grasp it by constantly applying “a trial and error” rule, yet they fail to comprehend the whole truth, and this cognitive obstacle ends up with inertia in prices and output later. Even if prices and wages become more flexible, this will not necessarily curb the business cycle movements in output, so the society’s longing to stabilize output will proceed, which in turn, is to lead central banks to react to this desire. [10]

Communication

We should bear in mind that, monetary policy to a greater extent is about managing expectations. And communication is by far the most effective tool in framing and dealing with expectations and becomes increasingly pervasive by constituting a key instrument in a number of central banks. Central banks achieve their targets by “creating news” (the central bank’s pronouncements influence expectations and result in significant movements in asset prices) and “reducing noise”(the central bank communication makes its operations more cut and dried, which in turn, is likely to decrease volatility in financial markets). [11]

Another serious difference from basic assumptions is the way agents respond to new information. Case of EntreMed, a drug company, is an interesting example of anomalies. In November of 1997 New York Times published an article about a drug patented by EntreMed, which reported positive results in curing cancer. Unsurprisingly the stock price of the company rose, by 28%. Further on May, New York Times publishes the same article, now on front page which causes the stock price of EntreMed to increase by 330% in one day and a 7,5% increase for overall biotech companies. As it is stated, although no new information was revealed, yet it dramatically affected the market. [12]

But there are unprecedented quandaries and occasional errors associated with poorly designed and fallacious communication. For instance, in October 2000 when then-ECB President Wim Duisenberg indirectly disclosed that there would not be further central bank intervention to support euro, it brought about an immediate depreciation of euro. Another famous example is related to Fed Chairman Ben Bernanke. In April 2006, he stated that his testimony had been misinterpreted, which led to a marked market reaction – investors deducted that interest rates could easily rise, since they took the words of Bernanke for “reversing himself”. These two examples justifies that more talk does not necessarily make things even clearer. [13]

In illustrating the impact of central bank communication on financial markets, we should factor in that the first variable to be affected is “expectations of future short-term rates”, which, in turn, influence long-term rates and other financial market prices

and these prices have huge impact on macro variables such as inflation and output. [14]

It's undeniable that, effective and sophisticated central bank communication ought to make policy more predictable and market expectations of future short-term rates more accurate. However, above all, central banks are concerned with long-term predictability, which becomes attainable provided that agents devise an effective method for real comprehension of the way central bank thinks and acts. This is what [15] meant by putting "perhaps the best a central bank can do is to "teach" the markets its way of thinking". [16]

Effects of interviews and speeches by central bank committee members on interest rates

	FED	BOE	ECB
3 month interest rates	0.97	0.46	2.05
6 month interest rates	0.46	0.80	1.57
1 year interest rates	0.88	0.95	2.47
2 year interest rates	1.01	0.13	2.48
5 year interest rates	1.14	0.15	1.96
10 year interest rates	0.76	-0.21	0.61
20 year interest rates	0.64	0.02	0.44

The table shows the response of interest rates in basis points to speeches and interviews given by committee members of the different central banks (FOMC members, MPC members and Governing Council members, respectively), containing some non-neutral reference to monetary policy inclinations. Statements that are perceived as suggesting a policy tightening inclination coded as +1, statements that are perceived as suggesting a policy easing inclination as -1...

Overconfidence

On the other hand, Brakman point out that even the professionals in Central Banks are not immune to some non-standard phenomena, namely overconfidence. They claim that current inflation-targeting policies which dominate in the majority of Central Banks around the world are the result of recent successes preformed in controlling inflation rate, but the weaknesses of the general equilibrium model which is applied to derive this approach favoring inflation targeting are often ignored. This, in turn, leads unanimous acceptance of this policy and to rather over-ambitious targets. This might result in a painful realization of real abilities of central bankers. Authors state that optimism about the power of central banks and the overconfidence may result in higher expected inflation and loss of credibility, which, in turn, will make the control of inflation more difficult. Thus, academicians and authorities should be more realistic about what they can and what they cannot and this ought to be communicated to public. [17]

Macroeconomic Targets of Monetary Policy

Considerable flaws concerned with standard model gave a rise to a more behavioral approach being included in analyses, beginning from the late 1960s. But, according to

Akerlof, newly developed school of thought named New Classical economics faced difficulties in at least six macroeconomic phenomena due to the primitiveness of behavioral assumptions. They are:

1. The existence of involuntary unemployment;
2. The impact of monetary policy on output and employment;
3. The failure of deflation to accelerate when unemployment is high;
4. The prevalence of under saving for retirement;
5. The excessive volatility of stock prices relative to fundamentals;
6. The stubborn persistence of self-destructive underclass. [18]

Now we will try to address 2 of them, which are relevant to monetary policy, and operations of Central Bank.

According to New Classical economist, monetary policy has no real effect on output levels or employment, since rational agents in economy adjust their wages and prices to expected inflation, which, in turn, outweighs central bank's actions. Unsurprisingly, this proposition conflicts with evidence from the field. Moreover, central banks' power to affect economy is widely accepted fact. Criticism of New Classical economists is mainly targeted toward sticky price behavior, suggesting that it is irrational to stick to any price level. New Keynesian approach point out price-stickiness as main flaw of new classical approach, and justify it by introducing menu costs. [19] Additionally, Akerlof suggests that individuals and firms can be characterized rather like "near-rational", meaning that insignificant changes in inflation is unlikely to affect their behavior, as the costs associated with it are second order (or small). Near-rational model is able to solve the puzzle of relationship between monetary policy and rational expectations, and behavioral economics provide range of means to explain relation of change in money supply and changes in output as well as employment. [20]

Another important research area for behavioral economics is prominent Phillips curve, which is intended to explain the correlation between inflation and unemployment. According to Phillips, there is a constant trade-off between two these indicators for policy makers. Theory developed to the end of 1970s suggests that there is natural rate of unemployment, resulting in a vertical long run Phillips curve. In the example of Great Depression, it is argued that this hypothesis breaks down at high levels of unemployment and inflation. [21]

Further, theory suggests that low or negative inflation rates should force firms to decrease nominal wages of workers. However, findings of recent behavioral researches show that managers cut wages only as a last resort and mainly try to avoid this action, despite the low inflation. [22] Firms are unwilling to treat their workers in "unfair" way: cutting nominal or real wages. [23] Moreover, it is clear from intuitive understanding of psychology that workers resist to wage cuts. Additionally, lower rates of inflation are frequently not included in their decision-making process. [24] In this model, when inflation is sufficiently low, most agents don't focus on the difference between real and nominal variables, so inflation is relatively unimportant for nominal wage bargains and for prices. As inflation rises, however, it becomes salient to a growing fraction of agents who take it fully into account. This hypothesis gives rise to a long-run Phillips curve that is bowed in at very low inflation rates,

backward bending at slightly higher rates, and ultimately vertical at the “natural rate” when inflation is sufficiently high. [25]

Inflation is also reported to decrease happiness; lower and even zero inflation will equalize nominal and real terms and make it easier for individuals to plan their decisions. This is an incentive for policy makers to keep inflation low. On the other hand, another behavioral study shows that prevalence of downward wage rigidity creates an opportunity to benefit from low, but positive inflation targeting. [26]

Conclusion

Recent researches provide clear-cut evidence that people often deviate from the way that benchmark neoclassical theories assume. People have money illusion, follow rules of thumb, and care about issues like fairness and equity. [27]

“After consulting my chief psychologist, I am confident that the reframing proposed in the new well-being policy will increase happiness by 34% at almost not cost”. Even though it’s not quite conceivable that this very statement has been put into words by an outstanding official, we still hope that psychologists and behavioral economists will eventually become the centre of attention in crafting any kind of public policy and needless to say, their contribution is likely to be somehow the essence of final verdict in this regard. [28]

DellaVigna predicts that economist will increasingly consider behavioral phenomena in their analyses. Moreover he identified two potential areas of future research: market interaction between standard and non-standard agents, and policy applications. [29]

Principally, behavioral science has essential implications for public policy and as a matter of fact even miniscule situational factors can sometimes generate enormous impact on the individual action. All in all, however challenging it may seem, that’s to say, the influence to shaping policy by behavioral researchers, it definitely ought not to be treated as” a lost cause”. [30]

Conventional economics is unable to explain wide range of well-documented evidences of non-standard behavior by agents observed in the field. This suggests that theorists should examine potential implications of the behavioral science to macroeconomics in detail. Such an approach may be far more important in aiding monetary policy over horizons of 2-5 years, than developments in the “standard model”. [31]

Thaler (2000) predicted that economists in following two decades would concentrate on the research of human cognition in order to more deeply characterize economic agent. He also claims that “Homo Economicus will be more emotional” meaning that academicians analyze and examine human emotions in a more detailed way and will include it to the economic models. [32]

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