

How psychological bias shapes accounting and financial regulation

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Abstract: Most applications of behavioral economics, finance, and accounting research to policy focus on alleviating the adverse effects of individuals' biases and cognitive constraints (e.g. through investor protection rules or nudges). We argue that it is equally important to understand how psychological bias can cause a collective dysfunction – bad accounting policy and financial regulation. We discuss here how psychological bias on the part of the designers of regulation and accounting policy (voters, regulators, politicians, media commentators, managers, users, auditors, and financial professionals) has helped shape existing regulation, and how an understanding of this process can improve regulation in the future. Regulatory ideologies are belief systems that have evolved and spread by virtue of their ability to recruit psychological biases. We examine how several psychological factors and social processes affect regulatory ideologies.

Submitted 26 September 2016; accepted 19 October 2016

Introduction

Most applications of behavioral economics, finance, and accounting research to policy focus on alleviating the effects of individuals' biases and cognitive constraints. This includes, for example, the literatures on investor protection and on libertarian paternalism or nudges (Sunstein & Thaler, 2003). Although it is important to address individual dysfunction, we argue that it is equally important to understand how psychological bias can cause a collective dysfunction (i.e. bad accounting policy and financial regulation).

This distinction can be summarized by the dichotomy of Good Rules for Bad Users versus Bad Rules. Good Rules for Bad Users provide information in a

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form that is useful for users who are subject to bias and cognitive processing constraints. Bad Rules are superfluous or even pernicious policies that emerge from psychological bias on the part of a variety of ‘designers’. As an example of Good Rules for Bad Users, the field of behavioral accounting has identified how various biases and cognitive constraints on information processing affect investor and auditor decisions (e.g. Maines & McDaniel, 2000) and has developed proposals for improving accounting rules and regulation in order to address these problems (e.g. Hodder *et al.*, 2001). The same distinction applies to financial regulation more generally.

Of course, not all rules are Bad Rules. Good rules of the road have developed – partly by trial and error and partly by design – and play essential roles in the functioning of markets. Accounting systems for recording transactions have evolved over many centuries in order to facilitate trust and exchange. Major accounting principles are codifications of practices that evolved spontaneously over long periods (Waymire & Basu, 2008). Even most libertarians still support state coercion in order to enforce voluntary contracts and to prevent fraud.

Nevertheless, in this evolutionary process, rules and regulations have been shaped by the irrational component of human psychology, as well as functionality. As Immanuel Kant famously said, “Out of the crooked timber of humanity, no straight thing was ever made.”¹ Social processes can build popular ideas about regulation that are even more crooked than what individuals would come up with in isolation.

Of course, the public choice literature in economics has studied how rational and selfish pressure groups or political agents can produce socially inefficient regulation, but the problem goes beyond lobbying by interest groups. A further problem is that psychological bias can make Bad Rules seem appealing to naïve political participants (see also Caplan, 2001; Daniel *et al.*, 2002; Hirshleifer, 2008; Hirshleifer & Teoh, 2009). Nevertheless, until surprisingly recently, economists have disregarded the effects of irrationality by political participants on financial regulation.

In fact, the ability of interest groups to prevail in establishing bad regulation largely derives from the biases and limited attention of others.² We therefore examine here how psychological bias on the part of the designers of regulation

¹ *Idea for a General History with a Cosmopolitan Purpose* (1784), Proposition 6.

² Even the mainly rational public choice literature has traditionally allowed implicitly for cognitive limitations by recognizing that voters in a large democracy have little incentive to gather or process information (‘rational ignorance’; Downs, 1957). However, if people rationally recognized their ignorance, they would have a substantial degree of immunity to the self-serving messages that pressure groups promulgate (Caplan, 2001; Hirshleifer, 2008).

and accounting policy (voters, regulators, politicians, media commentators, managers, users, auditors, and financial professionals) has shaped existing regulation and how an understanding of this process can improve regulation in the future.

Applications of psychology to law and politics (e.g. Jolls *et al.*, 1998; Kuran & Sunstein, 1999; Caplan, 2001; Murphy & Shleifer, 2004) often rightly emphasize the biases of voters (e.g. Caplan, 2007). However, we also consider the biases of commentators, practitioners, and regulators on policy. Also, like some but not all of these studies, we view it as crucial to incorporate psychological research explicitly rather than basing theories of political bias primarily upon introspection.

Individual-level biases do not feed into rules and regulations by a direct and inevitable path. Policy tends to be driven by *regulatory ideologies* – belief systems that have evolved and spread by virtue of their ability to recruit psychological biases in order to attract attention and support. We discuss several such ideologies and how they are supported by psychological factors such as salience-biased attention, overconfidence, affect, and scapegoating, as well as by moral psychological foundations such as feelings about fairness and reciprocity.

We call this focus on bias of political participants and on regulatory ideologies the *psychological attraction approach* to financial regulation and accounting policy (Hirshleifer, 2008; Hirshleifer & Teoh, 2009). In this approach, the form of presentation to the public – the emotional and attentional hooks – are crucial for the success of a regulatory ideology. For example, a policy that is presented as regulating an identified set of greedy villains or protecting an identifiable set of victims (Jenni & Loewenstein, 1997) tends to be more appealing than a policy that saves statistical lives or improves some abstract notion of social welfare. More generally, this approach focuses on what kinds of narratives are the most salient and alluring to political agents and how ideas about public policy spread from person to person through social transactions and the media.

The main social and psychological processes that we focus on here in order to explain financial and other forms of regulation and accounting policy are attention and salience, omission bias, in-group bias, concepts of fairness, overconfidence, mood contagion, attention cascades, and the cultural evolution of ideology. This list includes both individual-level biases and the social processes that modify or amplify them.

The positive claim that irrationality plays a major role in policy-making is not equivalent to the normative claim that interventionist government policies are bad. It could be that irrationality helps to overcome frictions (such as pressure group politics or high-inertia legal and political institutions) that would

otherwise prevent establishing *better* policies. Although our primary focus is positive, we do also comment tentatively here about normative issues.

Attention and salience

How attractive a policy is depends not just on the *salience* of the costs and benefits conferred upon different parties. For example, people are more resistant to transparent taxes than hidden ones (McCaffery & Baron, 2006), and taxation systems are structured to exploit this, as with tax withholding rules.

Politics is therefore a war of attention in which simplistic sound bites and slogans are used to frame debates. Constraints on voter information processing are central to understanding regulatory outcomes. Political combatants craft arguments to exploit the heuristic cognitive processing of listeners. Such arguments do not need to be valid or profound; they need to be easy to understand and vivid enough to remember.

Salient stimuli that contrast with other stimuli in the environment attract attention, making them more likely to be encoded and retrieved. Attention is also drawn to *vivid* stimuli, which are emotion-laden or provide interesting narratives (Nisbett & Ross, 1980: 45), an example being the identifiable victim effect (greater sympathy for individual than statistical victims).

A vivid aspect of the collapse of Enron was the betrayal of employees who plunged their retirement investments heavily in Enron stock. Enron managers who manipulated Enron's accounting promoted company stock to employees even while selling their own shares. Enron became an instantly recognizable byword for malignant greed. Unlike many corporate frauds in which the victims are general shareholders, the victims at Enron were visible individuals. The media enthusiastically conveyed narratives of exploitation of the innocent by the mighty and of pride coming before a fall. Along with accounting fraud at WorldCom, the Enron scandal helped set the stage for the introduction of new financial reporting regulations in the Sarbanes–Oxley Act of 2002 (SOX).³

In sharp contrast with the vivid gains to protecting fraud victims, the costs of a financial regulation imposed upon general shareholders are often hidden and diffuse. Several observers have argued that the shift in focus of managers and boards from business guidance to legal compliance was greater than expected (Committee on Capital Markets Regulation, 2007; Perkins, 2007). But the intangibility of manager time and attention makes any such costs non-

³ SOX regulations were not explicit responses to Enron, but this and other accounting frauds helped establish an anti-business public mood (e.g. see Romano, 2005: 1524–6) that created a strong impetus for regulation of potential financial misdeeds.

salient. Furthermore, as a matter of mental accounting (discussed below), the cost of SOX to general shareholders (and, more generally, any regulation that imposes hidden paperwork and costs) can be integrated with the overall profit that the firm generates, leaving an impression that shareholders overall are doing fine.

Limited attention offers a possible ‘Good Rules for Bad Users’ explanation for the fact that accounting reporting rules involve aggregating transactions, thereby destroying information content (Lev, 1968). Modern information technology permits extensive disaggregation (i.e. reporting much more about underlying transactions). However, such reports would convey little to users who lack the processing capacity to interpret such information. Aggregation makes reports comprehensible and succinct. However, there is no guarantee that the form of aggregation arrived upon will be the optimal one. Aggregation opens the door both to accounting manipulation by firms and to interest group lobbying for favored reporting rules.

Furthermore, attention constraints can result in self-standardization by users on a few aggregates even when more information is potentially available. This can result in spontaneous fixation upon a *conventional disclosure regime*, wherein investors focus their attention on one or a few key items (such as earnings) to the exclusion of other performance measures. In such a regime, firms and analysts reinforce this focus by disclosing and forecasting earnings rather than other incrementally informative measures.

People tend to divide payoffs into separate mental accounts that are treated as non-comparable even when they are freely able to shift funds between accounts. For example, some people feel that they have not really lost money on a stock investment that has gone down if they have not sold it yet, because it is a mere ‘paper loss’ and the stock could go back up. Also, people measure their performance in different accounts relative to arbitrary references points (such as the historical purchase price of a stock) in order to decide whether they have gains or losses. These phenomena are known as mental accounting (Thaler, 1985).

The tendency to feel that gains or losses do not matter as much until some trigger for re-evaluation occurs (such as the sale of the asset) makes it feel natural to recognize transactions only when they are essentially complete (e.g. at product delivery rather than when the deal is contracted). This helps explain the *revenue recognition principle* in accounting (Hirshleifer & Teoh, 2009).

The accounting principle of *conservatism* – anticipating losses but delaying recognition of profits until they are certain – is pervasive throughout history and across countries. Users (or standard-setters who consider their needs) may be highly averse to the prospect of disappointment and may perceive

that conservatism makes such disappointments less likely (Hirshleifer & Teoh, 2009). Reducing the size of a current gain by not recognizing some revenue is a little painful, but not nearly as painful as a future loss if the foreseen cash flow fails to appear.

The above may be caused by loss aversion and loss salience. Decision problems can be framed in terms of possible gains relative to a low reference point or losses relative to a high one. People dislike even small losses measured relative to a salient reference point, a phenomenon known as *loss aversion* (Kahneman & Tversky, 1979). We call the extension of this to social perceptions, such that people care more about others' losses than gains, *loss salience*.

Consistent with loss salience, the risk perceptions of both analysts and investors tend to focus asymmetrically upon the potential for large losses (Koonce *et al.*, 2005). A rational investor in assessing risk should consider the overall payoff distribution, perhaps as reflected in variance, for example. But even financial professionals tend to focus on bad-case scenarios, as with the value-at-risk methodology for risk management, in which risk is measured by the maximum likely loss.

Asymmetry between omissions and commissions

Few people would murder someone for a few dollars, but many people refrain from donating money that could save lives very cheaply. It seems that passivity is viewed as a safe harbor even when its outcomes are unfavorable. Another example is not vaccinating a child, even when the incremental protection from disease greatly exceeds the incremental risk of vaccine-induced death. This preference for omissions over commissions is called *omission bias* (Ritov & Baron, 1990).

Omission bias can help explain why historical cost accounting is psychologically attractive. Revising to match current market conditions ('marking to market') in principle increases accuracy. However, revising an asset's valuation is a commission, whereas valuing at historical cost is passive. Either choice can be wrong *ex post*, since the payoffs that the asset ultimately generates are not perfectly predictable. But since revising is a commission, it will seem especially irresponsible when it leads to large *ex post* errors (Hirshleifer & Teoh, 2009).

Omission bias can also explain why investors often fail to diversify and why regulators, ostensibly to protect investors, sometimes *prevent* them from diversifying. For an American investor, buying into the Botswana stock market may feel exotic – a risky commission. The idea that this is risk-decreasing, for any given expected return, is unintuitive. Regulations designed to protect unsophisticated investors from dangerous securities or asset classes, whatever their

advantages, by their nature reduce diversification (Del Guercio, 1996). For example, pension rules in different times and places have blocked certain sets of investors from investing in privately held or foreign firms, or in hedge funds.

Firms often receive adverse publicity when their derivative transactions lose heavily. Media coverage of such events seldom makes clear whether the positions were speculative bets or hedges of the firm's business risk. But even hedging is a commission that can lead to losses that were avoidable by refraining. Observers with omission bias may perceive a risk-reducing strategy as unwarranted and perilous.

Caring and fairness preferences

People view it as important to care for those in need and to giving value in exchange when acquiring resources from others (e.g. see Haidt, 2012). However, people evaluate the neediness of others relative to historical reference points. Recent losses are viewed as a special hardship. The deluge of sympathy for people whose houses have been damaged in a natural disaster often temporarily overshadows any ongoing concern for poor people with no houses at all. This is another consequence of loss salience.

The instinct to care for the needy and to dislike those who do not causes people to revile sellers who charge high prices to the poor or who engage in 'price gouging' during periods of distress. This includes lenders who charge high interest rates to borrowers with high credit risk. So caring preferences motivate price ceilings, especially during disaster periods, and usury laws.

A familiar irony is that such regulations can hurt the poor by blocking mutually beneficial exchange. Of course, there is a paternalistic case for usury laws (in the Good Rules for Bad Users tradition). People who are subject to present bias (Laibson, 1997) can be tempted to borrow and overconsume. However, popular discussion of usury focuses on the unfairness of a high interest rate and on the greed of lenders, rather than on the imprudence of the poor and the need to ration their consumption. This suggests that Good Rules for Bad Users is not the whole story.

The symmetry of equal division of resources makes it a focal reference point for evaluating fairness. Norms of equal division are therefore common (though never with universal application). People often share equally in experiments on resource transfer games (Camerer & Thaler, 1995). The fairness of equal division stimulates support for progressive income taxes and bitter criticism of high executive compensation (as well as special tax penalties on firms with high executive salaries).

The principles of equal division and of reciprocity combine to create special scorn for executives who receive high pay when their firms are doing poorly.

Also, consistent with loss salience, the preference for equal division become stronger when a poorer group experiences a loss. So there is also special scorn for wealthy executives who fire blue collar workers.

Extensive laboratory research has shown that people entrust others with resources when selfish individuals would not. In the trust game, Player 1 can give some resources to Player 2. This contribution is multiplicatively supplemented by the experimenter, so that the subjects can jointly gain from trust. Player 2 can then reciprocate by giving some resources to Player 1. Very often Player 1 contributes and Player 2 reciprocates.

Most people have little understanding of how financial intermediation creates value. This often leads to the conclusion that speculators, bankers, and other middlemen are parasites. The value improvements achieved when middlemen shift resources across time or place amounts to charging buyers more for a commodity than what the middleman paid for it. Doing so seems to violate the principle of equity in exchange. This confusion is reflected in the medieval concept that the just price is the cost to the seller (Southern, 1968) and in a contempt for commerce that long predates the Middle Ages. Suspicion of middlemen is exacerbated by the fact that their costs are not salient to buyers.

Part of the hostility to lenders comes from the fact that they have resources that they could share instead of lending to those who have less. This seems uncaring. Also, it is soothing to the self-esteem of a defaulting borrower to view the lender as a leech. If the borrower is recently impoverished, loss salience further condemns the lender.

In medieval Christian thinking, the fair price for a future consumption claim in units of current consumption is one, meaning that the fair interest rate is zero. This is based on a folk economic intuition that neglects the ability to employ resources productively to generate increases over time. The notion that a positive interest rate is unfair is shared in many cultures, religions, times, and places. For example, Islamic finance rejects positive interest rates (though there are partial workarounds). This is not to say that insistence on a zero interest rate is universal, especially in modern times, but the interesting point is that acceptance of positive interest rates is not universal and is often grudging.

Popular understanding of the value of speculation is almost nonexistent. Speculators are viewed as mere gamblers who are playing a constant-sum game that generates no social value, who profit by cleverly taking resources from others, or who introduce extra risk into markets. The stigma of speculation rubs off on speculative vehicles such as derivatives, which are often viewed as tools for gambling or manipulation.

Other factors reinforce the image of speculation as a source of social ill. Historically (and today), agricultural speculators profited from extreme movements in commodity prices that correlate with bad news for farmers or consumers. A group that is suffering while speculators are growing rich will naturally tend to suspect manipulation, as when a speculator sells grain at high prices while people are starving or who builds inventories while giving little to suffering growers during a glut.

In modern times, many countries have established policies to limit speculation through securities transaction taxes, short selling restrictions, and higher taxes on short-term than long-term capital gains. There are cool rational arguments for limiting speculation made by such figures as John Maynard Keynes, James Tobin, and Lawrence Summers. However, anger toward speculators and suspicion of their motives may be a more powerful driver of actual regulation. This does not tell us anything about whether such regulation is, on the whole, good or bad, since useful regulations can be established for bad reasons. However, at a minimum it raises suspicions about whether the form and parameters of such regulation are set optimally.

In-group bias and xenophobia

In-group bias is the tendency of people to regard their own group favorably in comparison to outsiders (Brewer, 1979). We can see the tracks of in-group bias in financial regulation. Fear or hostility toward foreigners is one of the motivations for restrictions on foreign shareholding and control of domestic companies. In some countries, government ownership of selected industries is motivated by patriotic pride.

In-group bias causes bias in economic exchange. Evidence from European countries shows that individuals have less trust in countries with different religions and lower genetic similarity. Lower trust is associated with less trade in goods, portfolio investment, and direct investment (Guiso *et al.*, 2009).

Scapegoating (Aronson *et al.*, 2006) is the tendency to blame hardships upon some visible, unpopular, relatively weak out-group. This leads to a desire to punish and regulate the offenders. Sometimes the targets of indignation are genuine miscreants, as with the managers of Enron. But indignation does not always induce the *form* of regulation that is best suited to ameliorating poor future outcomes.

In the Enron case, rage was centered upon the ruin of employees whose pensions were invested in company stock. The directly relevant preventative for such outcomes is for people to hold diversified portfolios. This suggests improving investor education or introducing nudges or rules that encourage diversified investing. However, it is much more appealing to regulate potential

culprits than victims. So under the psychological attraction hypothesis of regulation, it makes perfect sense that the result was new disclosure regulation (SOX) rather than mere investor education or regulation pushing investors to diversify.

Self-deception and the fix-it fallacy

Bias in self-attribution – a form of self-deception – allows people to maintain high self-esteem in the face of conflicting news arrival. Excessively favorable beliefs about the self – whether they are about ability, generosity, or any other quality – are referred to as overconfidence. Whatever its possible benefits, overconfidence causes important mistakes. An overconfident individual will overestimate his or her ability to take actions to improve a situation. This is closely related to the *illusion of control*, a form of overconfidence in which people think they can control even uncontrollable events, such as picking a winning lottery number.

Overconfidence and the illusion of control will cause people to think that with casual study they can diagnose social ills and evaluate proposals to fix them. Hayek (1988) refers to such overconfidence as “the fatal conceit.” Overconfidence is likely to be especially severe for the design of social policy, because making good policy is very different from the problems people face in everyday life.

Daily problems are usually solved by vigorously attacking them. Passivity does not get the car fixed, make you fit, or help you earn a living. Vigorous action, deployed with a modicum of common sense, improves outcomes.

But this intuition fails when applied to shortcomings and failures of complex adaptive systems. A case in point is the history of quack remedies in medicine over the millennia. It is highly intuitive that doctors can, through aggressive treatment, make patients better. Such treatment, unfortunately, has often been more dangerous than the disease. Useful treatment requires deep knowledge and a scientific mindset in order to systematically improve upon the healing powers of the body. It is, on the other hand, very easy to make things worse.

Like the human body, the modern economy also has a spontaneous order that achieves functional results that no central planner or designer created, nor indeed could any one person ever understand it in full detail (Hayek, 1978). This spontaneous order is driven by gains from exchange, which guide self-interested individuals as if by an invisible hand to help others (Smith, 1776).

In consequence, energy, goodwill, and common sense are seldom enough to position a policy-maker to improve on the decisions of millions of interacting

strangers with diverse information and preferences. Unlike everyday personal policy, in public policy what is in short supply is not energy and will – it is the incorporation of deep scientific understanding into decisions.

The intuition that the ills of a complex adapted system can and should be solved with vigorous commonsense action can be called the *fix-it fallacy*. The fix-it fallacy leads immediately to what Hirshleifer and Teoh (2009) call intervention bias: a hair-trigger readiness in social policy for observers – even experts – to promote naïve solutions to problems.

Of course, passivity is not the correct response to all social or medical ills, but it is a much stronger default option than popular intuition gives it credit for. This is why, in medicine, the classical edict to ‘do no harm’ was so valuable during the millennia of ignorant medical practice. Just as importantly, when action is called for, the fix-it fallacy often creates an attraction for simplistic, deleterious solutions over potentially beneficial ones.

Hindsight bias – the tendency for people to mistakenly think after the fact that they had foreseen it all along – reinforces intervention bias. When something goes wrong on a regulator’s watch, there is widespread complaint that the outcome was inevitable and that the regulator should have enacted policies to forestall disaster.

An example of the fix-it fallacy is the popular idea that regulators should know how to manage asset market fluctuations. Observers who think that the market is overheating think that their forecast accuracies exceed those that are implicit in market valuations. But market prices aggregate the information of many professionals who are betting their own money or careers on and devote their working lives to understanding various parts of the economy, each of which is intricately complex. Prices reflect much specialized knowledge that no single individual possesses, so there is little reason to believe that even expert regulators – let alone casual media commentators – have a systematic ability to recognize when an asset is over- rather than under-valued.⁴

Overconfidence also causes observers to dismiss market institutions as failures based on remarkably shallow evaluation of their possible costs and benefits. One example relates to popular criticism of the short-termism of American business by both media commentators and apparent experts. To combat short-termism, critics have suggested that US corporate managers should invest more heavily, reduce leverage, and refrain from making quarterly earnings forecasts (known as ‘earnings guidance’). Elsewhere, we have argued that the ideology of anti-short-termism is logically incoherent, that its justifying

⁴ On the more general weak performance of expert forecasters working in social domains to predict the future, see Tetlock and Gardner (2015).

assertions are empirically unsupported, and that its main prediction made in the 1980s – that Japan would grow and innovate while the USA would fail – was cataclysmically mistaken. However, the component ideas have an *emotional* connection that makes them highly attractive to people when bundled together as an ideology. As a result, the criticism of short-termism in business persists (Hirshleifer, 2008; Hirshleifer & Teoh, 2009).

This example illustrates how the fix-it fallacy makes it easy to forget that there are reasons why any given market institution was created, and these reasons need to be understood in order to recommend rational interventions. Indeed, the failure to grasp the ability of markets to evolve institutions to solve problems can lead regulations to fix problems that do not exist. A possible example of this is the demand for and actuality of securities transactions taxes to restrain excessive speculation.

Just as economists tend to dislike using tariffs for the purpose of suppressing international trade, one might guess that economists would dislike taxes for the purpose of suppressing financial exchange. However, after the 1987 stock market crash, leading economists proposed security transaction taxes to reduce speculation (Stiglitz, 1989; Summers & Summers, 1989). Such taxes are present in many countries and have been proposed in the USA for both stocks and derivatives (Hakkio, 1994). The concern is that speculation generates negative externalities through excessive volatility, mispricing, and perhaps capital misallocation.

However, Coasean principles suggest that there is an incentive for affected parties to negotiate in order to internalize costs and achieve better outcomes. If the externalities from speculative trading are large, this recommends finding ways to reduce it. Indeed, there is an extensive and highly diverse set of levers that markets have for constraining speculative activity. This fact is almost never addressed by proponents of security transaction taxes (Hirshleifer, 2008).

The liquidity of trading in speculative assets is an equilibrium outcome that reflects the choices of firms, exchanges, and financial intermediaries. Exchanges – sometimes in negotiation with listing firms – use various rules to influence security liquidity. Firms also influence their own liquidity through their choice of how much information to disclose (i.e. how much to reduce information asymmetry) and through their choice of which exchange to list on. A private firm can unilaterally choose to remain illiquid simply by never going public, and there are major firms that do exactly this. Public firms can choose to go private and, again, some do. Public firms also regularly adjust their liquidity through stock splits. Warren Buffet's Berkshire Hathaway chooses to maintain a very high stock price in order to reduce trading. At the portfolio level, mutual funds can limit frequent withdrawals by investors

by charging back-end loads. Withdrawals can be completely blocked by organizing as a closed-end fund.

Whether these means of controlling speculation can partly or fully deal with the externality problem depends on exactly what the externality is – who is helped, who is hurt, and whether the relevant parties can negotiate cheaply and easily. The answers to these questions are not instantly obvious, but it is notable that even sophisticated scholarly discussions of the problem of speculation seldom recognize the *possibility* that externalities could – by means of market forces – be internalized.

The above points and examples notwithstanding, the psychological attraction approach to regulation is not wedded to the view that regulation and government intervention is excessive. Psychological bias can easily induce under-regulation as well. For example, the need for people to believe in a just world (an aspect of what psychologists call ‘motivated cognition’) can cause people to reject regulation constraining economic predators.⁵

The dynamics of regulatory sentiment

We now turn to the social processes by which ideas about regulation rise and fall. Even when all decision-makers are rational, people can converge upon very ill-informed decisions owing to information cascades (Banerjee, 1992; Bikhchandani *et al.*, 1992). As Bikhchandani *et al.* (1992) show, the very ill-informedness of cascades makes them fragile. When new public information arrives, everyone understands that the basis for the regulation was weak, so the public can suddenly turn against it. This can lead to volatile outcomes – fads.

However, attitudes toward regulation are heavily influenced by deviations from rationality. Some naïve theories about social problems and regulatory solutions are more contagious than others. Furthermore, waves of optimism or pessimism can cause booms and busts in regulatory ideas, just as waves of mood can cause stock market bubbles.

In *attention cascades*, public discourse becomes heavily focused for a period on a particular topic, such as opportunities from investing in internet stocks at the turn of the millennium, or about fears of physical hazards or of assault by a hostile group. Public attention is self-reinforcing, since the fact that others are talking about a topic makes the topic an attractive one for conversation (Fast *et al.*, 2009). If the topic is an apparent failure in the financial and accounting

⁵ It can also reduce support for redistribution of wealth to the poor. The political and economic consequences of the need to believe in a just world are modelled in Benabou and Tirole (2006).

systems, there is a self-amplifying pressure for regulation to protect against such failures. For this reason, accounting and financial regulation is often tightened after market crashes and severe recessions.

Attention cascades are slight generalizations of the notion of *availability cascades* of Kuran and Sunstein (1999). People tend to judge the frequency or importance of a type of occurrence according to their ability to remember examples of it (Tversky & Kahneman, 1973), an example being overestimation of death by shark attack (a vividly horrible form of death) relative to car accident. This availability heuristic leads to sudden booms in attention to particular hazards or alleged hazards. Increased discussion of a threat makes it seem more common, frequent, and significant. The self-reinforcing aspect of attention cascades – including availability cascades – makes them error prone and not fully predictable.

Nevertheless, there may be some pattern to the occurrence of attention cascades. Negative mood causes people to evaluate evidence more critically and to be more pessimistic. This implies a slackening of informal standards for the monitoring of firms during good times and a tightening of such standards in bad times. Therefore, in good times, firms will get away with greater earnings management because investors, analysts, and auditors will investigate such behavior with less diligence and suspicion.

The informal tightening of standards during bad times and the shift toward greater attention to rule violations implies a positive feedback loop that can amplify public pressure for regulation. During bad times, firm failures bring accounting irregularities to light. Public discourse shifts to corporate misconduct, increasing the pressure for regulatory oversight. This encourages the plaintiff bar, prosecutors, regulators, and politicians to pursue misconduct more aggressively. Public perceptions of business ethics become increasing cynical, reinforcing the cycle.

During good times, the feedback operates the other way. Therefore, tightening of formal regulation tends to occur in bad times and relaxation in good times. This helps explain why legislation that limits investor rights or allows more risk-taking by banks tends to be enacted after market booms.⁶

Regulatory ideologies

Ideologies have sometimes led to regulation running rampant, as with the catastrophic state-run economies under communism. Dysfunctional forms of

⁶ Examples include the 1927 government agency policy permitting commercial banks to issue securities, the 1995 Private Securities Litigation Reform Act, the 1998 Securities Litigation Uniform Standards Act, and the 1999 Financial Services Modernization Act.

economic regulation such as price controls and restrictions on international trade recur again and again. Anti-market ideology remains popular even in market economies and – for good or ill – underlies much regulation. Ideologies of class conflict immediately suggest regulation of the behavior of a minority group: the rich. Regulatory ideologies sometimes reflect hostility toward other religious or ethnic groups and again lead to calls for regulating the disfavored group.

Regulation is sometimes wrought under the influence of a conspiracy theory – a type of ideology built upon hostility to a group and drawing upon a psychological need for a simple explanation for social ills. People have a dread of dangers that are hard to understand or can operate through hidden means to strike unexpectedly (Slovic *et al.*, 2002). This leads, for example, to greater fear and loathing of genetically modified foods and nuclear energy than of automobiles. Conspiracy theories are built upon claims that some disfavored group is a hidden menace that is causing society's problems and creating greater ones.

Financial markets are hard for most people to understand and are subject to wide fluctuations, which create both fear and a need for simple explanations. This makes people receptive to conspiracy theories about asset markets. The idea that a market crash emerges without any individual's intention from the interaction of many investors is implausible to many. The human mind is inclined to attribute agency, which leads to the conclusion that social outcomes are the consequences of deliberate intent. Conspiracy theories provide simple, plausible explanations for market booms and busts.

Conspiracy theories tend to become popular during bad times, perhaps because of the need for people in distress to protect their self-esteem by blaming others for their hardships. Conspiracy theories have often cast foreigners, Jews, or speculators as villains who control the financial system in order to profit from market manipulation (Pipes, 1997; Chancellor, 2001; D'Acunto *et al.*, 2015).

The view that commerce is low and demeaning has been present across cultures for thousands of years and is based on the idea that seeking profit is greedy. The early Christians and influential thinkers such as Plato, Aristotle, Confucius, and Thomas Aquinas were suspicious of private property and had a disdain for trade for profit. The equal-division principle motivates socialist and communist ideologies that reject private property and the freedom to engage in exchange. Even today, popular entertainment routinely depicts business leaders as thieves when they are not busy conspiring to commit murder and mayhem for profit.

The misconception that trade is a constant-sum game bolsters ideologies that identify trading for profit as greedy. Constant-sum thinking is a simple heuristic for thinking about commerce that does indeed involve a conflict of interest

over price and quality (as well as a common interest in striking a deal). The role of constant-sum thinking in motivating voter errors is emphasized by Rubin (2002). Morality is not the only wellspring of anti-market ideology. The appeal of socialism comes in part from overconfidence about the ability of a few technocrats to manage an economy, as discussed earlier.

Ideologies are cultural traits, which are assemblies of ideas that work together to grab our attention and adoption. Such traits tend to spread to the extent that they are effective at enlisting human cognitive and affective biases in support of their key tenets.⁷ Ideologies usually include a moral perspective about how people should transact with each other socially and economically.

The psychological attraction approach to regulation suggests that anti-market ideologies will prosper during hard times because people prefer to blame someone other than themselves when experiencing hardship. Therefore, in hard times, the view that the greedy businessman is enriching himself through theft and the financier by manipulating the inscrutable financial system becomes more appealing. This linkage between the appeal of anti-market ideologies and economic conditions deserves to be tested empirically.⁸

There are also ideologies that have evolved with a more specific focus on financial decisions and markets. The ideology of anti-short-termism mentioned earlier is such an example. Although space does not permit going into this example in depth, we view it as persuasive and encourage the reader to review our fuller discussions of it (Hirshleifer, 2008; Hirshleifer & Teoh, 2009) for insight into how naïve ideologies are shaped by psychological bias, how they spread, and the deep influences they have on influential commentators and policy-makers.

Conclusion

We argue that regulation derives in large part from psychological biases on the part of regulators and participants in the political process and from the exploitation of these biases by evolving regulatory ideologies. We therefore recommend a greater focus on how to avoid outcomes with ‘Bad Rules’, instead of on identifying ‘Good Rules for Bad Users’. Indeed, since regulations are

⁷ This idea of ideology as a reflection of differences in the spread and evolution of cultural traits derives from the memes concept of Dawkins (1989) and developments by Richerson and Boyd (2006).

⁸ Utopian movements more generally are attractive during times of dislocation, when ‘true believers’ who can gain a sense of self-worth identify with a greater cause (Hoffer, 1963).

influenced by psychological forces, the shape of regulation often reinforces instead of correcting individual-level biases.

The psychological attraction approach to regulation does not inherently imply that government intervention is excessive, since psychological bias can help put into place good regulations that would otherwise be blocked by political and institutional frictions. Nevertheless, since the set of possible tempting regulations is unlimited, our own perspective is that Bad Rules tend to accumulate like barnacles, placing a permanent drag on economic activity. Regardless, the psychological attraction approach suggests that the loosening of financial regulation – for good or ill – is most feasible during boom periods.

Pressure for regulation becomes more intense during downturns and more generally during attention cascades. Since such events are transient, this creates extreme dynamics for naïve regulatory ideologies. It follows that political inertia can serve as a valuable safeguard against ill-considered shifts in the strictness and shape of regulation. Related ideas provided the motivation for the separation of powers, enumerated powers, and irrevocable rights in the United States Constitution and Bill of Rights. Supermajority rules and default sunset provisions can add further salutary inertia. More generally, explicit study of the psychological attraction of competing ideas can provide insight into the sources of ideological shifts, as well as perhaps into how to prevent deleterious ideologies from spreading – or at least from dominating regulatory outcomes.

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