ANIMAL SPIRITS VS THE *Holy Spirit*

WORLDVIEWS AND FINANCIAL CRISES

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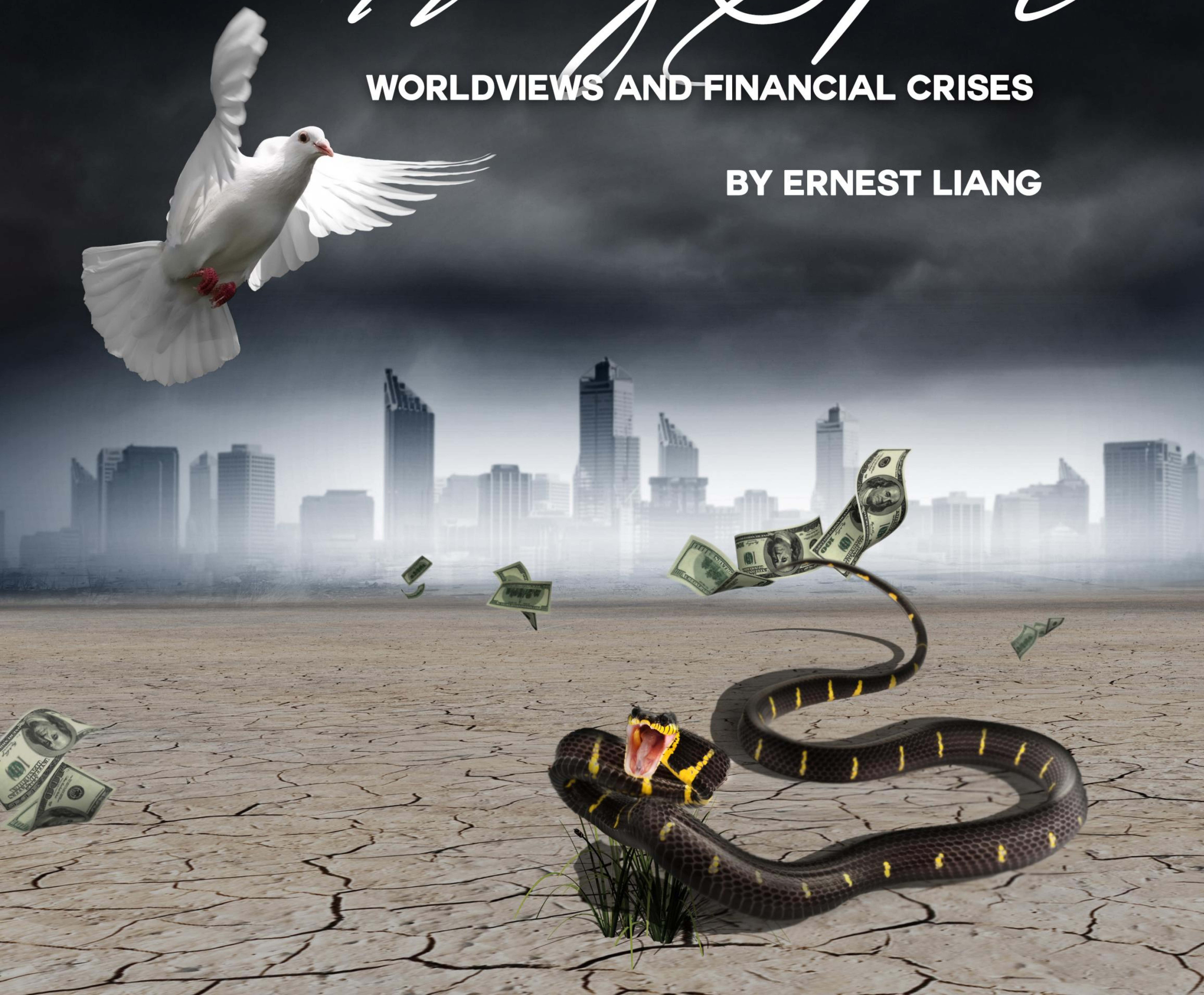

Abstract

Volatile markets, recurrent credit crises, and the seeming intractability of economic booms and busts of the recent past have eluded academics and policymakers eager for lasting solutions. Irrational behaviors driven by "animal spirits" – human passions found to often underlie market panics and manias, have aroused the need for redoubled regulatory response and ethics education. However, regulatory efficacy is often suspect because of the rational behavior of innovative agents, and moral suasion (ethics) rings hollow when people living in moral relativism are blinded to the convicting power of the Holy Spirit. A difference in worldviews explains why reactive policy fixes are often ineffectual unless true confidence is restored with a spiritual transformation of the heart and mind.

Introduction

In financial markets, volatility (asset price gyrations) is synonymous with risk. Heightened risk perception discourages participation by market investors and precipitates speculative trading, leading to more volatility, rising risk premiums, and depressed asset prices.[1] The decade that began in the year 2000 is often labeled the "lost decade" because the burst of the internet and subprime housing bubbles, along with the after effects of the 9/11 and global credit crises, brought about one of the worst 10-year investment periods ever for stocks.[2] Market volatility was inarguably a contributor to the market's performance malaise, but what were the drivers of runaway, spontaneous volatility that can and have plunged markets and entire economies into a tailspin?

The experience of the last decade has put the spotlight on the fundamental role of the human psyche in the recurrent cycles of financial and economic crises. Human emotions and passions – greed, fear, excitement and hope – offer unique insights into why markets spiral into euphoria and panic against rational expectations.[3] As one analyst observed during a particularly volatile time in recent market history, "Macro factors and psychology are the most important factors for investors right now."[4] The behavioral perspective on markets also convinced some scholars that future crises will be difficult, if not impossible, to eliminate.[5]

While human psychology contributes to a better understanding of market upheavals, it does not help resolve problems that are beyond human self-control. The nature of man and his relationships are the basic substance of both the behavioral sciences and the Holy Scriptures, and it is the latter that can offer a definitive solution to the intractable ills of the human psyche.

Policymakers who don't share a biblical worldview would arrive at drastically different conclusions than those who do. If humans are but evolved animals with higher intelligence, then human passions and the behaviors they manifest are spontaneous expressions of our animal spirit. These expressions need to be constrained, coaxed, and perhaps channeled by laws toward the common good. Accordingly, much emphasis has been placed by secular scholars and policymakers on the role of the state, by engaging tools of legislation, regulation, ethical education, and public awareness campaigns, as key pillars for any meaningful solutions.

If instead humans are made in God's image and bear a conscience redeemable by faith, then Christian virtues would play a significant role in sustaining the robustness of modern market systems. As Logue observed, "(Christian) virtues and virtuous behavior make markets more efficient and that sufficient integrity must exist to engender a critical level of trust or markets will completely collapse."[6] This suggests that any solution which ignores the life transforming power of the Holy Spirit does not address the core issues of human frailty and will necessarily fall short. As theologian Carl Henry observed back in 1955: "The disengagement of economic problems from the spiritual realm, the determination to find economic solutions while the religious problem is ignored or held in suspense, constitutes the prime crisis."[7]

This essay suggests that a comprehensive solution to market turbulence and financial crises is not found in a behavioral theory of the will, but rather one of the heart – one that is transformed and renewed day by day in a Spirit-filled life. Human frailties, the psychological underpinnings of cycles of booms and busts, can be met in the end only by spiritual answers. Biblical revelation, which gives unique insights into the nature and experience of the human soul or psyche, offers the only kind of wisdom that can restore hope and redress deficiencies that lie at the heart of financial and economic crises.

Financial Crises and the Nature of Man

Historic cycles of market manias, panics and crashes are a hardy perennial in world financial history and share features with much commonality.[8] From the Dutch Tulip mania and the South Sea and Mississippi bubbles in the 17th and early 18th centuries, to the parade of regional and global financial crises since the 1980s, financial panics and the associated economic maelstroms are marked by almost uniform undercurrents of excesses in liquidity, leverage, and risk-taking.[9]

The concept of "excesses" or "manias," however, suggests a loss of touch with rationality, a basic tenet of (neo)classical economics. Economic self-interest in the classic (Adam) Smithian sense is understood to promote fair and orderly (i.e., confident) markets.[10] The rational expectations assumption in economics postulates that asset prices are generally "right" in efficient markets, making excesses and frenzied reactions to changes in economic conditions unsustainable and expeditiously self-correcting events.[11] While affirming rationality as a useful and generally valid description of reality, economists do allow for occasional departures from this assumption when rational individuals succumb to some type of "group think," "mob psychology," or "hysteria."[12]

One widely recognized thread that strings together historical episodes of economic upheaval is traced, not surprisingly, to the very nature of man. Humans are at the same time rational and irrational decision makers. The rational man is driven by a deliberative assessment of options based on an informed, timely, forward-looking evaluation of relevant costs and benefits. The affective man, who behaves purely in response to innate passions such as optimism, pessimism, anger, greed and fear, is anything but rational.[13]

Historically, both patterns of behavior play a role in the boom-bust cycles of the financial world. Creative innovations that advance markets, improve trade, reduce risk, and create wealth were inevitably products of the resourceful, evaluative utility maximizer. Yet activities that take advantage of such innovations often spring from spontaneous responses to affective stimuli encompassing emotions and knee-jerk reactions aroused by basic instincts.

For example, the growth of complex, often highly leveraged, financial instruments known as derivatives has taken financial trading by storm since the 1970s. Derivatives make markets more efficient because they allow for the efficient transfer of risk between market participants. But often "derivatives were a simple case of greed and fear. Clients used these instruments to make money (greed) or protect themselves from the risk of loss (fear). Frequently, they confused the two."[14]

In today's modern economies, financial innovations have enabled massive transactions of highly leveraged speculative positions. The frequency of spiking volatility and convulsive reactions in financial markets seem to have multiplied since the turn of the new millennium as increasingly complex instruments and high frequency trading enable sharply amplified returns of investments with increasingly shortened time horizons.[15] As a result markets have become increasingly seized with "hysteria" as investors react in knee-jerk reflex to opinions, speculations, or rumors, especially when the macroeconomy is at an inflexion point.[16]

Animal Spirits and Economic Crises

John Maynard Keynes, the namesake of Keynesian economics, first referenced the term "animal spirit" when describing the emotive state of human nature in economic decision making. In his seminal work, *The General Theory*, Keynes suggests that "most of our decisions…can only be taken as the result of animal spirits - a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities."[17] According to Keynes, "animal spirit" is a persistent, predictive cause of economic instability.

More recently, Nobel laureates George Akerlof and Robert Shiller concluded in their book, *Animal Spirits: How Human Psychology Drives the Economy* that "economic crises are caused by changing thought patterns…by our changing confidence, temptation, envy, resentment, illusion, and … stories."[18] According to these scholars, by ignoring the role of animal spirits, the rationality assumption blinds us to the most important dynamics underlying economic crises and a path to effective responses.

Within the moral framework, the struggle between emotive and rational behaviors finds a close parallel in Adam Smith's contests between "passions" and "the impartial spectator," and in the Bible, the Apostle Paul's incessant tug-of-war between "flesh" and "spirit." Adam Smith, in *The Theory of Moral Sentiments*, identifies the impartial spectator as the human ability to take a dispassionate view of one's own conduct, as the source "of self-denial, of self-government, of that command of the passions."[19] Yet he recognizes that such perspective-taking can be overcome by sufficiently intense passions which "the greatest degree of self-government is not able to stifle."[20]

For the Apostle Paul, the "flesh," being the embodiment of the intellectual and moral frailties of fallen humanity, does and desires no good (Gal. 5:19-21). It is dominated by "fleshly passions" (Rom. 7:5) and is unable to obey God's law (Rom 8:3). The "spirit," on the other hand, is the new self, created in righteousness and holiness of the truth (Eph. 4:22-24). Driven by the presence of God in man (Gal. 4:6, Rom 8:15), the regenerated self is dominated by disciplined living that seeks to please God. These two principles are in deep and irreconcilable conflict, "for the flesh sets its desire against the Spirit, and the Spirit against the flesh; for these are in opposition to one another, so that you may not do the things that you please" (Gal. 5:17).

These moral perspectives suggest that the torrent of "irrational" behaviors and moral indiscretions when reasoned responses and self-denial should be expected reflects the nature of the "flesh" at work. According to secular analysts, animal spirits (i.e., "flesh") are intrinsic to human nature. Individuals are basically incapable of making or unwilling to make proper economic decisions for themselves.[21] Hence, paternalistic government programs and policies must step in to save people from making mistakes. In other words, artificial restraints of the will are needed to steer human behaviors and to rein in raging passions when they flare up. To quote Akerlof and Shiller, "the proper response lies with the state executing interventions so that animal spirits can be harnessed creatively to serve the greater good, [and thus] … (the) government must set the rules of the game." [22]

A main difficulty with this prescription, however, is that "animal spirits" also pervade government institutions and regulators so that they are as susceptible to panics and manias as in the private sector. In addition, policymakers almost always overestimate the impact of a new law or policy intended to constrain human behavior.

Evidence abound that such constraints often generate behavior which was never imagined by its sponsor. As Michael Jensen and William Meckling, two pioneers of modern finance, concluded: "as resourceful and evaluative maximizers, individuals respond creatively to the opportunities the environment presents, and they work to loosen constraints that prevent them from doing what they wish."[23] In other words, rules that merely seek to constrain rather than incentivize modified behavior often fail to yield expected results because of the creativity of the resourceful, rational human being.

The past half century offers many illustrations of how newly imposed constraints by the state fumbled in the face of rational responses from those being impacted. It is well documented that practices such as regulatory arbitrage and loophole mining have been used effectively by impacted market participants to frustrate attempts of governmental intervention.[24] According to Miller, the exploitation of regulatory inconsistencies has indeed been a major impetus for financial innovations.[25]

Over time such innovative responses multiplied the sophistication of financial instruments, greatly enhanced the complexity of trades, and spawned shrewdly adaptive market intermediaries. Inevitably, future crises would expand in scope and intensity with each recurrence, and will be met by ever stronger regulatory response from the state. Such innovation-regulation response cycles will cease to spiral only when the institution gets so asphyxiated by the regulatory morass that it finally collapses under its own weight.

The wisdom that can solve the problems of human weaknesses must be the wisdom that applies divine truths to the human experience.

If humans are creative, rational adaptors to artificial restraints as history seems to suggest, then the wisdom to deflecting future financial crises is unlikely to be found in the goodwill or discipline of human institutions. In a post-modern world in which "religious belief" is but a matter of "personal feelings" (i.e., emotions, passions),[26] humanistic "moral" suasion also rings hollow. The "good" of human action, in the absence of ascendant accountability, is but one variable, if at all, in the economic calculus of risk and return.[27] A worldly wisdom devoid of a transcendent God to whom all are accountable in eternity is the ultimate source of confidence loss,[28] the very trigger of panics and manias. But there is a better alternative; one found in the spiritual-moral moorings laid down by a higher, supernatural authority – the Creator God. As Carl Henry observed, "separate the economic sphere from the living God and His claims, and humans will drift from one crisis to another under any economic formula."[29]

Godly Wisdom and the Holy Spirit

Godly wisdom pertains to a regenerated spiritual person who leads a principled life that is not captive to fleshly passions. Godly wisdom, according to the Scripture, is especially associated with the Holy Spirit, as a gift from God and comes by revelation (1 Cor. 2:4-6, Eph. 1:17, James 1:5). The wisdom that is derived from human knowledge brings only grief and frustration (Eccl. 2:9-11), and the confidence and pride that are bred from such knowledge leads only to destruction (1 Cor. 1:19-20, Ezek. 28:2-9).

In the final analysis, the wisdom that can solve the problems of human weaknesses must be the wisdom that applies divine truths to the human experience. This wisdom, as Proverbs 9:10 declares, is based on the "fear of the Lord," a fear out of reverence that requires a personal knowledge of the Almighty. This divine wisdom keeps the commandments of God (Prov. 4:11) and is characterized by prudence (Prov. 8:12), discernment (Prov. 14:8), and humility (Prov. 10:8). It is the driving force for a life of obedience, restraint, faithful stewardship and all that is the antithesis of the corruptions perpetrated by fleshly passions.

Fairness

Among major themes connecting animal spirits to financial crises, fairness and confidence (or the lack of it) are of particular prominence. Fairness is the fundamental ethical requirement of financial markets. Fairness concerns the comparative treatment of persons in relation to some rule, agreement, or recognized expectation.[30] Actual or perceived unfair conditions (unlevel playing fields) or unfair trading practices (fraud and manipulation) compromise trust, discourage market participation, and contribute to volatile trading.[31]

Since fairness is driven by perceived reality and passionate belief, it is particularly vulnerable to exploitation in financial assets where the true worth is hard to ascertain given the complex nature of modern enterprises. This type of information asymmetry breeds moral hazard and outright scandalous behaviors, which tend to increase in euphoric periods when there is an apparent increase in the reward-risk ratio. The recent global financial crisis, for example, is often labeled a crisis of ethics.

Legislative justice and ethics education have often been considered the first line of defense against unfair practices that induce social harm. While laws and ethical standards constrain outward behavior, their limit stems from the rational response by transgressors to reward-risk tradeoffs when they are hijacked by passions such as greed, fear, pride and anger.

According to Scripture, justice and fairness are manifestations of God's moral excellence, and God's righteous character calls for believers to fulfill their sanctification by becoming righteous or just in actual moral acts.

From a Christian perspective, the concept of rights is central to justice. In addition, one person's right becomes another's duty. Therefore, the extension of a subprime mortgage to an eager home buyer when the agent or lender believes the transaction would likely bring financial ruin or undue hardship to the borrower is immoral. Scripture reminds believers of their accountability as safe-keeper of God's moral justice in all spheres of human activity, but especially in the realm of commerce.[32]

Instead of reacting to laws and ethics that prescribe the norms of earthly conducts, the redeemed believer pursuing a Spirit-filled life would live by spiritual norms that call for the proactive, continual renewal of their minds (Rom. 12:2). Godly wisdom complements the standard of righteousness with the laws of humility, contentment, and forgiveness, laws that are so clearly borne out in the Golden Rule (Mt. 7:12) and in Jesus' parables (such as the parable of the unmerciful servant in Mt. 18:21-35 and the parable of the workers in the vineyard in Mt. 20:1-16). The result is not a justice maintained by suppressing an impassioned drive to gratify the self, but rather a liberated justice enabled by the insatiable desire to please the Holy Spirit. Such forms of fairness transcend legal and ethical norms.

Confidence

Confidence is the foundation on which healthy and prosperous markets are built. The loss of confidence, working through its natural conduits of fear and panic, has frozen up credit markets, precipitated business downturns, and prevented economic recoveries. Economic historians Charles Kindelberger and Robert Aliber summarize it this way: "*Causa remota* of any crisis is the expansion of credit and speculation while *causa proxima* is some incident that saps the confidence of the system and induces investors to sell."[33] The change in the mindsets of investors from confidence to pessimism is the predominant source of instability in the credit markets.

Confidence is rational when people use available information to make predictions. Yet confidence is also trust, which by nature, goes beyond the rational. People act according to what they trust to be true, and the ebbs and flows of economic tides speak volumes about the trust people have in the wrong things: crooks, profiteers, speculators, and things that have overblown values.

To the Christian, the truth on which trust rests transcends the tangible and the shifting of fortunes, "for we walk by faith, not by sight" (2 Cor. 5:7), and "the Lord will be our confidence" (Prov. 3:26). Trust must be in the right object and the trustworthiness of the object must be grounded in evidence that endures the test of time. Such trust breeds confidence, and confidence displaces fear. As Paul reminds Timothy in 2 Tim. 1:7: "God has not given us a spirit of fear."

Christians trust the Spirit of God who indwells each believer as a source of power, love, and self-discipline. This self-discipline engenders behaviors that exemplify faithful stewardship. In spending decisions, for example, a believer who is confident in God's provision and His call to bear witness for trust would strive to steer clear of an indulgent lifestyle. As Larry Burkett reminds us, "Our position in the Lord's kingdom will be inversely proportional to how we indulge ourselves in this lifetime."[34] John Bogle, founder of Vanguard Group, one of the world's premier investment firms, ascribes the conundrum of the most recent financial crisis to "too much focus on things, not enough focus on commitment."[35] A Christian ethic for consumption will call for frugality and contentment in our lifestyle, with the knowledge that "for where your treasure is, there will your heart be also" (Mt. 6:20-21).

Our trust in the truths and commitment of the Almighty God also brings us face to face with His demand for accountability. The Parable of the Talents (Mt. 25:14-30) reminds us that faithful stewardship in the kingdom economy means Christians should be prudent investors, not impudent speculators. Benjamin Graham, often considered the father of value investing, describes investing as seeking capital preservation coupled with a reasonable expected return, and speculation as everything else.[36] Capital preservation means retaining without loss what has been entrusted to us, and reasonable return means accruing what is expected to be sustainable economic value in a risk-justified, long term transaction. The search for value requires a long term commitment, whereas speculation thrives on short term trading.

Bogle laments that "when our market participants are largely investors, focused on the economics of business,...(market) volatility is low. But when our markets are driven, as they are today, largely by speculators, by expectations, and by hope, greed, and fear, the inevitably counterproductive swings in the emotions of market participants…produce high volatility, and the resultant turbulence that we are now witnessing became almost inevitable."[37]

For Christians, the confidence that spawns contentment and a calmness of heart because of righteous moral acts speaks of a peace eternal. As Isaiah writes, "the work of righteousness will be peace, and the service of righteousness, quietness and confidence forever" (Is. 32:17). In Matthew 25, Jesus offers a clear roadmap for Christians to live confidently in a fallen world where complacency, fear, and untrustworthiness abound. In these three parables, The Parable of the Ten Virgins, The Parable of the Talents, and The Parable of the Sheep and the Goats, we learned that there is judgment awaiting those who do not live a Spirit-filled life – a life that is defined by the principles of alertness, accountability, and responsibility required of the regenerated man or woman.

Many of these same principles from Jesus' parables also undergird a majority of the policy prescriptions offered by secular analysts and bureaucrats to "rid" our future of financial crises. However, it is highly doubtful that these secular measures would have the desired, time-enduring effects since they fail to address the corrupted core of the human psyche, which requires a reformed heart and mind from submission to the Holy Spirit. For the skeptics, they need to look no further for

inspiration than the very embodiment of financial confidence itself: our currency, in which one is prominently reminded of the motto "In God We Trust."

Conclusions

In Shakespeare's famous play, *Julius Caesar*, Brutus, who masterminded Caesar's assassination and was about to engage in a historic battle, would exclaim:

> *"There is a tide in the affairs of men.*
> *Which, taken at the flood, leads on to fortune;*
> *Omitted, all the voyage of their life*
> *Is bound in shallows and in miseries.*
> *On such a full sea are we now afloat,*
> *And we must take the current when it serves,*
> *Or lose our ventures."*

Brutus' utterance exudes a confidence that is driven by a spirit of willpower, opportunism, and optimism. If one believes he/she is onto something auspicious, there is a pervasive sense that it is time to get on the train before it leaves the station and the exceptionally profitable opportunities disappear. It eerily reminds us of the same sentiment that permeated the (animal) spirit-filled real estate speculators and agents, be they representatives in the government, finance, or real estate industries, whose irresponsible behaviors ultimately plunged the markets and then the economies into turmoil in the most recent financial crisis. Their fate, of course, was the same as that which had befallen Brutus, who was defeated at Philippi.

Judging from the experience of the present and the recent past, the state of world economic affairs deserves nothing but a gloomy assessment of its destined path. Sovereign and household debt crises, policy gridlocks, volatility in the global financial markets, pervasiveness of financial scandals and the wild swings in public confidence punctuate the call for more laws, regulations and interventions by national agencies and supranational organizations. Inevitably, acknowledging the innovativeness of the rational man and the dominion of animal spirits is acknowledging the supremacy of a Godly wisdom that dismisses the efficacy of human solutions.

The spiritual truths of faith, accountability, justice and contentment are countervailing forces to the disruptive influences of animal spirits. They are never the products of legislation or self-reflection in a culture of moral relativism. Rather, they are the manifestations of a Spirit-enabled transformation of the human heart and soul. The world must be awakened to the truth that the appeal to moral or artificial restraints in the absence of the Holy Spirit's convicting and renewing power is ultimately futile. If there is one government policy that addresses this truth, however inadequately, it must be the one that honors religious liberty and the protection of free exercise of religion in all human institutions.

True "confidence" can only find anchor in a heightened awareness of moral and spiritual absolutes across the cultural landscape and a renewed sense of accountability to a higher authority

In reality we recognize that the Christian worldview is under siege. For financial markets, a world that does not recognize the dominion of God will always succumb to panics and manias because its confidence is misplaced. Yet even here, exactly in the ashes of destruction and despair, Christians can magnify the impact of their witnessing.

The believer, as salt and light, can effect real changes during times of economic upheaval for the glory of God. In the plethora of solutions offered for the financial crises, the Christian's voice for real reform must not be drowned out. True "confidence" can only find anchor in a heightened awareness of moral and spiritual absolutes across the cultural landscape and a renewed sense of accountability to a higher authority who will mete out eternal judgment according to His absolute moral laws.

The Scripture leaves no doubt that through faithful stewardship, believers can cultivate the consciousness of the divinity of their works and effect spiritual transformation around them. As the beloved cartoon character Pogo Possum would admit, "We have found the enemy, and he is us!" This admission is the real challenge for us all.

About the Author

Ernest P. Liang is Director of the Center for Christianity in Business and Associate Professor of Finance at Houston Baptist University. Prior to his academic career, he spent 25 years as a finance executive in firms ranging from technology start-ups to Fortune 500 companies, as chief economist of an economic consultancy, and as a principal of an advisory for middle market transactions and executive recruitment. Trained as an economist but practiced as a finance professional, he holds a Ph.D. and an MBA from the University of Chicago.

Notes

[1] The inverse relationship between market volatility and market return has strong theoretical and empirical support in the finance literature. See, for example, Crestmont Research, *Stock market returns and volatility* (2012), accessed online at: http://www.crestmontresearch.com/docs/Stock-Volatility-Return.pdf; H. Guo, "Stock market returns, volatility, and future output," *Review - Federal Reserve Bank of St.Louis*, 84(5) (2002), pp. 75-85; R.S. Pindyck, "Risk aversion and determinants of stock market behavior," *Review of Economics and Statistics*, 70(2) (1988), pp. 183-90.

[2] M.J. Pring, J.D. Turner, and T.J. Kopas, I*nvesting in the second lost decade: A survival guide for keeping your profits up when the market is down* (New York, NY.: McGraw Hill, 2012).

[3] J. Ferry, "Investing in the fear factor," *The Wall Street Journal* (online), September 19, 2010.

[4] M. Farrell, "Stocks: All eyes on Greece and inflation," CNN Money (online), April 4, 2012.

[5] See Y. Shachmurove, "A historical overview of financial crises in the United States," *Global Finance Journal* 22(3) (2011), pp. 217-231; C.M. Reinhart and K.S. Rogoff, *This time is different: Eight centuries of financial folly* (Princeton, N.J.: Princeton University Press, 2009).

[6] N.C. Logue, "Christian virtues and finance," *Journal of Biblical Integration in Business* (Fall 1996), p. 43.

[7] C. Henry, "Christianity and the economic crisis," *Vital Speeches of the Day*, 21(15) (1955), p. 1244.

[8] See, for example, C. Kindleberger and R. Aliber, *Manias, panics, and crashes* (Hoboken, N.J.: John Wiley & Sons, 2005); M. Bordo, "The crisis of 2007: The same old story, only the players have changed," in D. Evanoff, D. Hoelscher, and G. Kaufman (eds.), *Globalization and systemic risk* (Singapore: World Scientific Publishing Co., 2009), pp. 39-50; and Reinhart & Rogoff, *This Time is Different*.

[9] E. Liang, "The global financial crisis: Biblical perspectives on corporate finance," *Journal of Biblical Integration in Business* (Fall 2010), pp. 48-61; U.S. Financial Crisis Inquiry Commission, T*he financial crisis inquiry report: Final report of the National Commission on the causes of the financial and economic crisis in the United States.* Washington, D.C.: Government Printing Office, 2011.

[10]Adam Smith's idea of the "invisible hand" refers to the self-regulating nature of the marketplace when individual pursuits of self-interest eventually lead to a socially desirable outcome. According to Smith, the desire to "better our conditions" is a desire to be socially approved, and social approval is secured through good character and behavior (i.e., ethic of reciprocity) – essentially a condition of fairness. Furthermore, these private actions, taken collectively but exercised without coordination, generate harmony and a type of spontaneous order (cf. Hayek) in the broader economy.

[11] T.J. Sargent, "Rational Expectations," in *The concise encyclopedia of economics* (Library of Economics and Liberty, 2008). Retrieved from http://www.econlib.org/library/Enc/RationalExpectations.html.

[12] It is well established that, for example, in a demonstration effect, the Smiths will borrow and spend in order to catch up with the Joneses, resulting in crippling indebtedness. In a coordination failure, depositors will rush to withdraw in fear of being shut out, forcing a liquidity crisis for the depository institution and losses for depositors falling behind.

[13] G. Loewenstein and T. O'Donoghue, *Animal spirits: Affective and deliberative processes in economic behavior* (Cornell University Working Paper, 2004). Retrieved from http://cbdr.cmu.edu/seminar.

[14] S. Das, *Traders, guns & money: Knowns and unknowns in the dazzling world of derivatives* (London: FT Prentice-Hall, 2006), p. 12.

[15] S. Basu, "The new nemesis: Market volatility," *Journal of Financial Service Professionals*, 66(1) (2012), pp. 13-16.

[16] A case in point is the massive sell-off in global markets in the summer of 2011 from unfounded "rumors" about the financial soundness of French financial institutions that was floated and later retracted by a British tabloid (see D. Enrich, D., N. Bisserbe, and W. Horobin, W., "French bank shares plummet amid a mix of fears, rumor," *The Wall Street Journal* (online), August 11, 2011).

[17] J.M. Keynes, *The General theory of employment, interest and money* [1936] (reprint, London: Macmillan, 2007), pp. 161-62.

[18] G. Akerlof, and R. Shiller, *Animal spirits: How human psychology drives the economy, and why it matters for global capitalism* (Princeton, N.J.: Princeton University Press, 2009), p. 4.

[19] A. Smith, *The theory of moral sentiments* [1759] (Available from the Library of Economics and Liberty. Retrieved from http://www.econlib.org/library/Smith/smMS.html), p. 26.

[20] Ibid, p. 29.

[21]J. Gokhale, "Animal spirits," review of Akerlof and Shiller, *Animal spirits*. Cato Journal, 29(3) (Fall 2009), pp. 587-594.

[22] Akerlof and Shiller, *Animal spirits*, p. 173.

[23] M.C. Jensen and W.H. Meckling, "The nature of man," *Journal of Applied Corporate Finance*, 7(2) (1994), pp. 4.

[24] Regulatory arbitrage and loophole mining both refer to financial innovations or maneuvers that are designed to circumvent legal or regulatory constraints on traditional financial contracts and transactions. Common examples relate to international tax and bank risk capital regulations.

[25] M.H. Miller, *Financial innovations and market volatility* (Hoboken, N.J.: John Wiley & Sons, 1992).

[26] N. Pearcey, *Total Truth* (Wheaton, IL: Crossway, 2005), p. 21.

[27]This is not to say that post-modernism is devoid of ethics, although post-modern ethics is not based on universal or unchanging principles. "Post-modernism rejects the idea of absolute truths, principles, and norms. It professes the validity of diversity and relativity in the definition of truths and moral virtues" (J.M. Vorster, "Christian ethics in the face of secularism," *Verbum Et Ecclesia*, 33(2), 2012, pp. 1-8). This cultural moral relativism makes accountability of human behavior situational since there is no universal moral reality to which one's moral judgment must correspond.

[28] W. Henley, "Life balance in the vortex of changes," *Christian Business Review* (No. 1) (2012), pp. 40-45.

[29] Henry, "Christianity and the economic crisis," p. 1244.

[30] The definition presented here is commonly referred as to procedural fairness since it concerns merely the application of an established rule or procedure and not the substance of the same rule or procedure. In other words, the rule (procedure) itself may be unfair or immoral even though it is fairly applied. The substantive fairness issue is a more contestable topic and is not discussed here. For more on this see E. Heath, "Fairness in financial markets," in J.R. Boatright, (ed)., *Finance ethics, critical issues in theory and practice* (Hoboken, N.J.: John Wiley & Sons, 2010), pp. 163-178.

[31] Boatright (ed.), *Finance ethics*.

[32] See, for examples, passages in Isa. 33:15, Prov. 16:11 in the OT and Col. 4:1 and Heb. 6:10 in the NT.

[33] Kindleberger and Aliber, *Manias, panics, and crashes*, p. 104.

[34] L. Burkett, *Business by the book: The complete guide of biblical principles for the workplace* (Nashville, TN.: Thomas Nelson, 1998), p. 43.

[35] J. Bogle, *Enough: True measures of money, business, and life* (Hoboken, N,J.: John Wiley & Sons, 2009), p. 183.

[36] B. Graham, *The intelligent investor* (New York, NY: Harper Business, 2005).

[37] Bogle, *Enough*, p. 52.