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Cover Page Footnote

I thank Colleen Baker, Richard A. Booth, Eric R. Claeys, Thomas C. Crimmins, John Y. Gotanda, James Maule, Joan G. Miller, Mark L. Movsesian, John F. Murphy, Jennifer O'Hare, Richard E. Redding, Amanda M. Rose, Chaim Saiman, and Mark A. Sargent for helpful comments and discussion about the ideas presented in this Article. I thank Courtney Magnarella for her excellent work as my research assistant. Most of all, I thank Jennifer L. Miller, whose assistance and comments on all aspects of this Article were absolutely indispensable to its completion.

MORALS IN A MARKET BUBBLE

*Robert T. Miller**

What role did moral wrongdoing play in causing the financial crisis? According to one of my co-panelists at the symposium, the primary cause of the demise of the financial sector was a series of poor ethical decisions by all involved.¹ Indeed, this panelist parcels out moral blame to regulators, Wall Street financiers, loan originators and securitizers, auditors, rating agencies, and consumers.² Economic journalist Jeff Madrick blames mostly the Wall Street bankers who, because of their “unquenchable thirst for easy profits,” took “unjustifiable risks for their own gain” that “jeopardize[d] the future of the nation’s credit system.”³ Going even further, my good friend Professor Ronald Colombo thinks that “our current economic woes are, in large part, the repercussions of a national crisis of character.”⁴ In his view, a relaxation of traditional values has spawned a generation of immoral bankers who “put[] profits before people.”⁵ These explanations are all very pious-sounding and provide a story that is readily intelligible to the average person who easily grasps moral arguments but knows little about finance and nothing about macroeconomics. This story, however, bears little relation to reality. Below, I shall explain why, first by sketching a purely economic explanation of the crisis and then by turning to some of the favorite examples of the moralizers and showing how the wrongdoing that they perceive in them is largely fantasy.

I. MARKET BUBBLES AND WHERE THEY COME FROM

The cognitive powers of human beings are limited. There is much we do not know about how the world will develop around us, and so in

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¹ Jon S. Hoak, Vice President, Chief Ethics & Compliance Officer, Hewlett-Packard, Business Ethics and Corporate Responsibility After the 2008 Bailout, Address at the University of Dayton School of Law Symposium, The Fallout From the Bailout: The Impact of the 2008 Bailout on Lending Regulation, Securities Regulation, and Business Ethics (Mar. 20, 2009).

² *Id.*

³ Jeff Madrick, *How We Were Ruined & What We Can Do*, N.Y. REV. OF BOOKS, Feb. 12, 2009, at 15.

⁴ Ronald J. Colombo, *A Crisis of Character*, HUFFINGTON POST, May 12, 2009, http://www.huffingtonpost.com/ronald-j-colombo/a-crisis-of-character_b_202562.html.

⁵ *Id.*

making market decisions—like whether to buy or sell, borrow or lend, and at what prices or interest rates—we human beings usually operate under conditions of great uncertainty. Sometimes, it may seem that something very important is changing (the kinds of things economists call “fundamentals”), and that this change will justify paying higher prices for a certain class of assets. Thus, in the 1990s, amidst the information technology revolution, when Internet usage was doubling every 100 days, people thought—reasonably and correctly—that dot-com companies were going to make quite a lot of money.⁶ How much money? That would depend on, among many other things, how long and how fast Internet usage continued to increase—and that, of course, no one knew for sure, for we never before had anything like the Internet. Hence, everyone involved in the market took an educated guess about how much Internet usage would increase and estimated what would likely be the future earnings of dot-com companies. As a result of these guesses and estimates, people bid up the prices of dot-com stocks. As it happened, however, the collective judgment of the market was too optimistic. Although Internet usage increased greatly, it did not increase as much as people thought it would. When it became clear that the growth rate of Internet usage was slowing and thus that the dot-coms were not going to make as much money as people had thought, it also became clear that the prices of dot-com stocks were too high. People then started selling them, and the dot-com stock prices crashed. We had a bubble, and then it burst.

Bubbles always work like this. They are based on uncertainty about important changes in fundamentals. Often, as with the dot-com bubble in the late 1990s, the uncertainty arises from technological change. Similarly, in the period from 1924 to 1929, the American economy experienced unprecedented productivity gains as major industries were rationalized and financial professionals invented new kinds of financial services (like installment purchases) that opened up new markets. People thought that these gains would be very big and continue for a long time, and so, aided by other financial innovations (this time buying stocks on margin), people bid up stock prices. In fact, the collective judgment of the market, though reasonable at the time, turned out to be overoptimistic. Once this became clear, stock prices crashed in 1929. Indeed, financial history brims with bubbles—from the tulip bubble in Holland in the 1630s and the South Seas bubble in England in the 1720s, to the conglomerate bubble in the 1960s, the Nifty-Fifty bubble in the 1970s, and the Japanese real estate bubble in the

⁶ See generally Yochi J. Dreazen, *Wildly Optimistic Data Drove Telecoms to Build Fiber Glut*, WALL ST. J. ONLINE, Sept. 26, 2002, at B1 & B8, available at <http://www.mail-archive.com/pennl@galaxy.csuchico.edu/msg72914.html> (referencing a 1998 Commerce Report stating the Internet usage doubles every 100 hundred days).

1980s.⁷ The dot-com bubble in the 1990s was simply the latest bubble in the American economy—until, that is, the truly tremendous bubble in the housing market in the early and mid 2000s.

The key principle to understand is that bubbles are no one's *fault*. Bubbles are simply a product of the limits of human cognitive powers. As long as people can buy and sell based on their expectations about the future (and based on what else do we buy and sell?), and as long as the human ability to predict the future is limited, it will sometimes happen that people are reasonably but mistakenly optimistic for prolonged periods of time.⁸ When this happens, the price of a class of assets rises too high—and then crashes when new evidence becomes available and allows people finally to realize their collective mistake. Until we abolish buying and selling under conditions of uncertainty or else become omniscient, from time to time there will be bubbles.

Because bubbles arise when there is a prolonged period of *reasonable error* about changing fundamentals, it is impossible for us to *know* when we are in a bubble. This perplexes some people, but there is no mystery here. All we are saying is that, while there remain reasonable grounds for thinking that a change in fundamentals justifies higher asset prices, people cannot know for sure that such higher prices are unjustified. While the bubble—that is, the reasonable error—persists, some people will (with more or less evidence to support their view) *suspect* that we are in a bubble, and some people will be *subjectively certain* that we are in a bubble (*subjectively certain* in the sense that such certainty is compatible with actually being wrong). These people will bid down or even sell short the affected assets (thus limiting the size of the bubble and so performing an important public service)—but this is not the same as *knowing* that we are in bubble. We *know* we are in a bubble only when the reasonable error about changing fundamentals is dispelled—that is, only when new evidence that there has been no change in fundamentals accumulates and becomes so conclusive that almost everyone believes that prices have risen too high. At this point, almost everyone sells, which means that asset prices crash. Hence, as soon as we *know* we are in a bubble, the bubble bursts. In hindsight, then, we can see that prices rose without a justifying change in fundamentals and then crashed again when the absence of the justifying change became apparent. Prices ran up because people *reasonably but*

⁷ See generally BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET: THE TIME-TESTED STRATEGY FOR SUCCESSFUL INVESTING* 34-96 (2007) (discussing examples of different types of bubbles in language accessible to lay readers).

⁸ What happens when people are buying and selling when they are too *pessimistic* about the future? Then, a certain class of assets will be underpriced, but people will generally not realize this until the change in fundamentals that justifies a higher price becomes apparent to the market. At that point, the price of the underpriced assets will rise steeply and remain high. Although such events are common enough, we do not have a word for them, no doubt because while bubbles tend to cause recessions when they burst, such pleasant surprises about improving fundamentals are just that—pleasant surprises.

mistakenly thought there was a justifying change. Thus, bubbles are knowable as such only in retrospect.

II. THE FEDERAL RESERVE AND INTEREST RATES

So, how did we get such a huge bubble in the United States housing market? Answering that question requires that we take a step back and talk about the Federal Reserve. In ways that most Americans never notice, the Federal Reserve can control interest rates by controlling the money supply. How it does this is complex and counterintuitive, and although I cannot go into all the details here, many accessible accounts are available.⁹ For our purposes, it is enough to understand the essentials. In particular, when the Federal Reserve is concerned that economic activity is slowing and the economy is going to slip into recession, it lowers interest rates by increasing the money supply.¹⁰ With interest rates lower, it is cheaper to borrow, and so people borrow more money. Because mostly what people do with borrowed money is spend it, as when individuals take out a mortgage to buy a house or businesses borrow to upgrade their equipment, lowering interest rates stimulates consumption and so elicits additional supply to meet increased demand.¹¹ If the Federal Reserve increases the money supply too much, however, and sets interest rates too low for too long, there will be more and more money chasing basically the same quantity of goods and services (that is, the money supply increases faster than the economy can expand output). Thus, prices will begin to rise, causing inflation, which has serious deleterious effects.¹² So, the Federal Reserve plays a delicate game: when the economy slows down, it lowers interest rates to increase economic growth and prevent the economy from slipping into recession, but when the economy speeds up too much and inflation looms, it raises interest rates to decrease economic growth and head off inflation.

Knowing when to raise or lower rates and by how much is, as you might expect, very difficult.¹³ Once again we bump up against the limits of human cognitive powers. Still, during the twenty-year period from about 1982 to 2002, the Federal Reserve did a remarkably good job of adjusting interest rates to support steady economic growth without triggering inflation. Indeed, the stability of growth in gross domestic product during

⁹ See BD. OF GOVERNORS OF THE FED. RESERVE SYS., THE FEDERAL RESERVE SYSTEM: PURPOSES AND FUNCTIONS 15-25 (9th ed. 2005), available at www.federalreserve.gov/pf/pdf/pf_complete.pdf.

¹⁰ More precisely, the Federal Reserve's open market operations affect conditions in the market for balances that depository institutions (i.e., certain banks) hold at the Federal Reserve Banks. See *id.* at 27-50. The text in this section takes a number of liberties and suppresses many complexities in order to achieve a more intelligible explanation of this somewhat arcane topic.

¹¹ See *id.* at 16-19 (explaining how changes in monetary policy affect the broader economy).

¹² See *id.* at 18 (discussing conditions under which the Federal Reserve would raise interest rates).

¹³ See *id.* at 20 (discussing some of the limitations under which policy makers at the Federal Reserve necessarily operate, such as limited and imperfect information about economic conditions, including the lag in macroeconomic data).

this period has led some economists to refer to these years as the “Great Moderation” and to give the credit therefor, at least in part, to improved monetary policy by the Federal Reserve.¹⁴ Notably, during this period interest rates (more accurately, the federal funds rate) as set by the Federal Reserve followed closely the so-called Taylor Rule, a guide to setting interest rates named for the macroeconomist who first proposed it, Professor John Taylor of Stanford University.¹⁵

III. THE FEDERAL RESERVE CREATES A BUBBLE IN THE HOUSING MARKET¹⁶

Now, after the bust of the dot-com bubble in 2000 and the terrorist attacks on September 11, 2001, the Federal Reserve naturally worried that the economy might slip into recession. Hence, it did exactly the right thing: it lowered interest rates.¹⁷ But then, beginning in late 2001, the Federal

¹⁴ The term was coined by James H. Stock & Mark W. Watson, *Has the Business Cycle Changed and Why?* in 17 NBER MACROECONOMICS ANNUAL 2002, 159, 162 (Mark Gertler & Kenneth Rogoff eds., 2003). Noting that from 1960 to 1983 the standard deviation of the annual growth rates in real GDP in the United States was 2.7% but from 1984 to 2001 it was only 1.6%, Stock and Watson use a variety of statistical techniques to attempt to explain this large drop in cyclical volatility of real economic activity and conclude that improved policy (especially improved monetary policy) was a significant factor in producing the Great Moderation. *Id.* at 185. The term “The Great Moderation” was further popularized by a speech of the same name by Ben S. Bernanke, then a Federal Reserve governor. *See* Ben S. Bernanke, *The Great Moderation, Remarks at the Eastern Economics Association* (Feb. 20, 2004), http://fraser.stlouisfed.org/historicaldocs/1191/download/64784/bernanke_20040220.pdf.

¹⁵ *E.g.*, JOHN B. TAYLOR, *GETTING OFF TRACK 3* (2009) (explaining how the federal funds rate departed from the Taylor Rule from late 2001 to early 2006). *But see* THE FEDERAL RESERVE SYSTEM: PURPOSES AND FUNCTIONS, *supra* note 9, at 23-24 (discussing the Taylor Rule as one among many guides to setting monetary policy and noting that the Federal Open Market Committee uses many measures to determine how to set monetary policy, not just the Taylor Rule).

¹⁶ At the time of the symposium at which this paper was delivered (March 20, 2009), I believed that the available evidence supported the proposition that the housing bubble was primarily caused by the Federal Reserve’s keeping interest rates too low for too long as explained in the text. *See, e.g.*, TAYLOR, *supra* note 15, and sources cited therein. Thus, on March 19, 2009, the day before the symposium, even Alan Greenspan, who naturally never accepted this view, lamented in *The Wall Street Journal* that “in mid-2007, history began to be rewritten” so as to blame alleged monetary policy mistakes by the Federal Reserve for causing the bubble. Alan Greenspan, *The Fed Didn’t Cause the Housing Bubble*, WALL ST. J., Mar. 19, 2009, at A15 (arguing that the bubble was caused not by monetary policy mistakes by the Federal Reserve but largely by unprecedented international capital flows into the U.S. housing market). As of the time this article is going to press in early 2010, however, new evidence is available that makes the matter less clear than the text allows. *See* Ben S. Bernanke, *Monetary Policy and the Housing Bubble*, Speech at the Annual Meeting of the American Economic Association (Jan. 3, 2010), <http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.pdf> (arguing that the Federal Reserve’s monetary policy was not responsible for the bubble). *But see* John B. Taylor, *The Fed and the Crisis: A Reply to Ben Bernanke*, WALL ST. J. ONLINE, Jan. 10, 2010, <http://online.wsj.com/article/SB10001424052748703481004574646100272016422.html> (arguing that Bernanke’s defense of the Federal Reserve’s monetary policy is mistaken). Clearly, more investigation is needed regarding the causes of the bubble. Although I continue to believe that the Federal Reserve’s monetary policy from 2002 to 2005 was too accommodating and was an important cause of the bubble, if I were writing the text of this piece today, I would express my views more guardedly and allow subprime mortgages a larger role in causing the bubble (i.e., because the higher housing prices rose, the more people qualified for subprime mortgages, thus increasing demand in the housing market and so causing housing prices to rise even higher, thus generating a bubble effect).

¹⁷ *See* Minutes of Conference Call of the Federal Open Market Committee (Sept. 13, 2001), http://www.federalreserve.gov/fomc/minutes/20010821.htm#Min_20010913 (discussing economic effects of the September 11, 2001, terrorist attacks). Press Release, Federal Open Market Committee (Sept. 17, 2001), (available at <http://www.federalreserve.gov/boarddocs/press/general/2001/20010917/>) (announcing a 50 basis point reduction in the federal funds rate from 3.50% to 3.0%).

Reserve departed from the Taylor Rule.¹⁸ When the rule would have called for raising rates, the Federal Reserve left them low—and then lowered them again. Through most of 2003 and into 2004, the federal funds rate stood at 1%—the lowest it had ever been.¹⁹ Indeed, the Bank of England, which performs in the United Kingdom a function similar to that of the Federal Reserve in the United States, had never lowered its analogous rate below 2%—never at any time since it was founded in 1694.²⁰ By 2004, the Federal Reserve did, indeed, start to raise rates, but it did so slowly, such that the federal funds rate lagged behind what the Taylor Rule would have prescribed until early in 2006.²¹

Now, what was the effect of the Federal Reserve's keeping interest rates so low for so long? Normally, the result would be inflation, and that indeed is what the Federal Reserve was on the lookout for,²² but there was no worrying inflation. From 2002 through 2005, however, housing prices were increasing rapidly, with prices in some markets increasing almost 20% per year in some years.²³ As we now know, this was a bubble. Having left interest rates too low for too long, the Federal Reserve had supplied the credit that people—many people—were using to buy houses.

This is hardly surprising, and it was a perfectly reasonable response from consumers. When the price of anything falls, people buy more of it, and so when the price of borrowing money (that is, interest rates) falls, people borrow more. The supply of housing does not increase quickly even when prices are rising (as economists would say, the supply of housing is inelastic), because it takes a considerable period of time to build a new house and because, at least in many areas, the supply of available land on which to build is severely limited. Hence, when the demand for housing shot up because there was so much credit available to buy houses, the supply of housing did not increase as fast as the demand. Housing prices thus rose sharply.

But why houses? After all, people can use borrowed money to do any number of things, and in fact from 2002 through 2006, people *did*

¹⁸ TAYLOR, *supra* note 15, at 1-14 (discussing the Federal Reserve's departing from the Taylor Rule and its effect).

¹⁹ Donald L. Kohn, Monetary Policy and Imbalances, Remarks at the Banking and Finance Lecture Series at Widener University 1 (Apr. 1, 2004), http://fraser.stlouisfed.org/historicaldocs/1226/download/67987/kohn_20040401.pdf.

²⁰ Jon Hilsenrath, *Fed's Path to Higher Interest Rates Begins to Take Shape*, WALL ST. J., Nov. 3, 2009, at A2.

²¹ See Taylor, *supra* note 15, at 3.

²² E.g., Press Release, Federal Open Market Committee (June 29, 2006) (available at <http://www.federalreserve.gov/newsevents/press/monetary/20060629a.htm>) (noting that "[r]eadings on core inflation have been elevated in recent months" and announcing an increase of 25 basis points in the federal funds rate to 5.25%).

²³ See STANDARD & POOR'S, S&P CASE-SHILLER HOME PRICE INDICES 2008, A YEAR IN REVIEW 2 (2009), available at http://www2.standardandpoors.com/spf/pdf/index/Case-Shiller_Housing_Whitepaper_YearinReview.pdf.

borrow for numerous purposes. The immense bubble, however, appeared in the housing market, not the market for biotech stocks or pork bellies or commercial paper.²⁴ So why houses? There are three main answers. First, real estate makes excellent collateral (for example, the borrower cannot abscond with it), and so real estate purchases are funded with debt disproportionately relative to purchases of other kinds of assets. Hence, if there is too much money and thus too much credit in the market, real estate is especially likely to suffer a bubble.

Second, Americans have long believed that everyone should be able to own his or her own home, and so government at all levels provides subsidies for homeownership. Most obvious among these are the deductibility for federal income tax purposes of the interest on home mortgage loans (the interest on most other kinds of consumer debt is *not* deductible),²⁵ the deductibility of state and local real estate taxes,²⁶ and the very favorable capital gains treatment available when homes are sold.²⁷ Less obvious but also very important is that American homeowners are not taxed on the income imputable from homeownership.²⁸ Furthermore, the so-called government sponsored entities, Fannie Mae and Freddie Mac, are in the business of buying or insuring home mortgages, and to do this they borrow huge amounts of money. Although their borrowings were not legally guaranteed by the United States, the market believed (correctly, as it turned out) that the federal government would step in to guarantee Fannie Mae and Freddie Mac's obligations if they ever got into trouble.²⁹ Fannie Mae and Freddie Mac were thus able to borrow very cheaply to buy or insure home mortgage loans, and this ultimately drove down the interest rates that homeowners had to pay. Through Fannie Mae and Freddie Mac, the government of the United States was indirectly lending its credit to homeowners—another big subsidy.

Third, certain financial innovations made more money available in the housing market. Of these, the most important were securitizations and

²⁴ This fact—that the bubble appeared in one particular market and not others—is quite enough, incidentally, to disprove the moralizing account of the financial crisis. For example, if, as Professor Colombo thinks, the financial crisis resulted from “a national crisis of character,” how come all the excesses he decries affected only the housing market? Colombo, *supra* note 4, at 1. Are we to believe that financial professionals who securitized home mortgages are profit-grubbing villains but financial professionals who securitized, say, car loans or student loans, are fine, upstanding people? This may require a logical miracle, for often they were the very same people.

²⁵ I.R.C. §163(h) (Lexis 2009).

²⁶ I.R.C. §164(a).

²⁷ I.R.C. §121.

²⁸ *E.g.*, Donald B. Marsh, *The Taxation of Imputed Income*, 58 POL. SCI. Q. 514 (1943); Mark A. Haskell & Joel Kauffman, *Taxation of Imputed Income: The Bargain-Purchase Problem*, 17 NAT'L TAX'N J. 232 (1964); *see also* *Helvering v. Independent Life Ins. Co.*, 292 U.S. 371, 381 (1934) (holding that taxpayers cannot be required to include in gross income the rental value of real property they own and occupy).

²⁹ Stephen Labaton & Edmund L. Andrews, *In Rescue to Stabilize Lending, U.S. Takes over Mortgage Finance Titans*, N.Y. TIMES, Sept. 8, 2008, at A1.

subprime mortgages. Because those who advocate moralizing explanations of the financial crisis have especially harsh criticisms of both these financial innovations, I shall give more detailed explanations of both below. For now, it is enough to understand that both securitizations and subprime mortgages greatly expanded the mortgage market. Securitizations did this on the supply side, because they allowed investors around the world to invest in mortgage debt in a very convenient form, thus increasing the amount of capital available to make mortgage loans and so driving down interest rates even further.³⁰ Subprime mortgages did this on the demand side because they allowed people who previously could not obtain mortgages (because they could not meet traditional underwriting criteria) to borrow money to buy houses.³¹ The combination of these innovations channeled hundreds of billions of dollars into the housing market.

So the story thus far has two parts. First, the Federal Reserve, by mistakenly setting interest rates too low for too long, gave people rational incentives to borrow a tremendous amount of money. Second, because of various structural factors, a great deal of that money poured into the housing market, resulting in a steep rise in the prices of residential real estate. This was the housing bubble.

But, as with any other bubble, it was impossible to know we were in a bubble while the bubble lasted. One view of the world (the true one, as it turns out, even though it seemed unlikely at the time) was that housing prices had bubbled.³² Another view (the false one, even though it was backed up by plausible reasons that convinced almost everyone, including me, at the time) was that changes in economic fundamentals justified higher housing prices. Under conditions as they then existed, most knowledgeable people thought that Alan Greenspan, the long-time Chairman of the Federal Reserve who had presided over the Great Moderation and had steered the American economy so successfully for so long, had discovered the secret to economic nirvana: sustained low interest rates without inflation.³³ This was a plausible claim because for a long time the numbers seemed to bear it out. Indeed, when Greenspan retired in 2006, no less an authority than Milton Friedman wrote in the *Wall Street Journal* that Greenspan's "performance has indeed been remarkable" and was "more than a difference of degree; it

³⁰ See generally MARK ZANDI, *FINANCIAL SHOCK: A 360° LOOK AT THE SUBPRIME MORTGAGE IMPLOSION, AND HOW TO AVOID THE NEXT FINANCIAL CRISIS* 79-93 (Pearson Education, Inc. 2009) (2008) (describing how securitization of home mortgage loans allowed investors around the world to invest indirectly in the U.S. housing market).

³¹ ZANDI, *supra* note 30, at 9-10; Gary Gorton, *The Subprime Panic* 28 (Yale Int'l Ctr. for Fin., Working Paper No. 08-25, 2008), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1276047.

³² Prominent economists and others, most notably Nouriel Roubini of New York University, argued that the housing market was suffering a tremendous bubble. See Stephen Mihm, *Dr. Doom*, N.Y. TIMES, Aug. 17, 2008, (Magazine), at MM26.

³³ E.g., David Malpass, *The Fed Provided the Fuel*, WALL ST. J., Mar. 27, 2009, at A13.

approache[d] a difference of kind.”³⁴ Note that Friedman said this long after the Federal Reserve had flooded the world with credit that inflated the housing bubble. As to the run-up in prices in the housing market, most knowledgeable people thought this too was due to changes in fundamentals. Thus, Ben Bernanke, now the Chairman of the Federal Reserve and then the Chairman of the President’s Council of Economic Advisers, told Congress in 2005 that, although house prices had risen nearly 25% in the past two years, “at a national level these price increases largely reflect strong economic fundamentals, including robust growth in jobs and incomes, low mortgage rates, steady rates of household formation, and factors that limit the expansion of housing supply in some areas.”³⁵ We thus had two competing accounts of what was happening. Although a small number of people argued we were in bubble, most people accepted the fundamental-change account, and for a long time the evidence seemed to favor the latter. Eventually, of course, the truth became clear—and that was when housing prices crashed.

IV. MORALS IN A MARKET BUBBLE—BORROWERS IN GENERAL

So what about all that supposedly immoral activity during the bubble? The moralizers blame consumers who incurred too much debt, loan originators who lent money to people who could not repay, loan securitizers who sold mortgage-backed securities without disclosing the risks involved, and bankers who took on excessive amounts of leverage.³⁶ Once we see that the defining condition of the bubble was abnormally low interest rates, however, it is clear that none of these charges stands up.

Now, in any market there is a certain amount of fraud and other wrongdoing, and that is as true of the housing and financial markets during the bubble as of any others. Thus, I am *not* saying that everyone participating in any way in these markets during the bubble was acting uprightly; that is obviously not true. Hence, individual examples of proven moral or even legal wrongdoing do not falsify my argument. Rather, what I *am* saying is that the activities that the moralizers condemn were virtually

³⁴ Milton Friedman, ‘*He Has Set a Standard*’, WALL ST. J., Jan. 31, 2006, at A14.

³⁵ *The Economic Outlook: Hearing Before the J. Economic Comm.*, 109th Cong. 54 (2005), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_senate_hearings&docid=f:27013.pdf (statement of Ben S. Bernanke, Chairman, J. Econ. Comm.).

³⁶ Actually, the list in the text is incomplete; moralizers find a way to blame virtually *everyone* participating in the housing and financial markets during the bubble. This is a sure sign, incidentally, that the moralizers have misdiagnosed the problem. They are asking us to believe that all kinds of people with nothing in common, except the fact that they were involved in some way or other with a particular market (residential real estate in the United States), all simultaneously went on immoral binges and, by sheer bad luck, their disparate forms of wrongdoing just happened all to result in higher asset prices and so a bubble. As explained more fully in the text, the correct account is that there were important general factors—abnormally low interest rates coupled with reasonable error about possibly changed fundamentals—that affected various people all in the same way—i.e., a way that tended to cause them to overvalue houses and assets backed by them.

always the lawful, rational, moral actions of average people responding to the financial incentives that had been created for them. This market bubble—like every other market bubble in history—was produced by rational commercial activity undertaken in conditions of uncertainty. The bubble and the crash can be fully explained without positing any moral wrongdoing by anyone—just policy mistakes about interest rates by the Federal Reserve and normal commercial activity responding to the incentives those mistakes created—all in a context of unavoidable uncertainty and error about whether certain economic fundamentals had changed.

Let us start with consumers. Was it immoral for consumers to borrow so much money during the bubble, whether to buy houses or anything else? Well, if interest rates are abnormally low, of course people are going to borrow more money. The whole purpose of the Federal Reserve's decision to keep rates so low for so long was to encourage borrowing in order to increase economic activity. Interest is the cost of borrowing money, and so it is not stupid—in fact, it is smart—to borrow more when credit is cheap. I recently refinanced my house and received a 4.25% interest rate on a thirty-year mortgage; I pay a lower rate on my mortgage than the historical average rate on thirty-year treasury bonds. I think that was pretty clever of me. Was it greedy? Greed is the inordinate desire for money and the things money can buy,³⁷ and I don't see anything inordinate about paying less for my mortgage than I have to. Borrowing money when interest rates are low is no different from buying other things when they're on sale. If it is not greedy to buy the two-for-one special at the supermarket, it is not greedy to borrow more money when interest rates are at historic lows.

But what about the consumers who borrowed money they were unable to repay? Was that stupid, greedy, or both? First of all, in many cases, when people borrowed that money, they thought—*reasonably*, though it turned out mistakenly—they *would* be able to repay. If interest rates really *were* going to stay very low indefinitely, and if the fundamentals of the housing market really *had* changed such that the house prices that we saw in the bubble were justified, then most people *could* have repaid the money they borrowed. These people made mistakes about future market conditions, but they were reasonable mistakes—the same mistakes, writ small, that Alan Greenspan (about interest rates) and Ben Bernanke (about housing prices) were making writ large. It is ridiculous to blame the average American—let alone blame him or her *morally*—for failing to predict the future behavior of markets better than Greenspan and Bernanke

³⁷ This is the definition of Thomas Aquinas, whom I take to be an authority on morality. See THOMAS AQUINAS, ON EVIL 391-94 (Jean T. Oesterle & John A. Oesterle trans., 1995).

did. You may as well say that the passengers on the Titanic were morally at fault for not discovering the flaws in the ship's design and not foreseeing the iceberg. Normal people without expertise trust acknowledged experts, and if it turns out that the experts were wrong (and especially if such experts were *reasonably* wrong), this is not the fault of the people who trusted them.

V. SUBPRIME MORTGAGES AND SECURITIZATIONS

Still, what about those subprime mortgages—mortgages made to borrowers with poor credit histories and little or no verifiable income—especially when they involved no money down and low teaser rates that reset to much higher rates after a couple of years?³⁸ Aren't these clear cases of "irresponsible lending practices" driven by "aggressive greed for market share and short-term results"?³⁹ Were not the loan originators tricking people into taking out mortgages that they did not understand and had no hope of repaying, and then securitizing the loans and passing off the risk to unsuspecting investors? That certainly sounds immoral, doesn't it?

I suppose it does, but that was not what happened. Both subprime mortgages and securitizations of mortgages are complex financial products, and this is very much a case where the details matter. Ignore those details, and you are likely to fall for simplistic, moralizing explanations; look more carefully, and it turns out the picture is quite different.

A. Subprime Mortgages

Thirty years ago, when a person applied for a mortgage, he usually did so in person to a loan officer at a bank, often a local bank. The loan officer had or obtained a good deal of information specific to the potential borrower before deciding whether or not to approve the loan. The decision making was individualized. Nowadays, however, when people apply for mortgages, they often do so online or otherwise by filling out standardized forms, and the loan originators feed the information on these forms into computerized algorithms to determine whether and how much to lend to the borrower. There is very little individualized investigation of borrowers and so little individualized decision making. On balance, this is a good thing because it lowers transaction costs for lenders and facilitates comparative shopping by borrowers, both of which translate into lower interest rates for worthy borrowers, which makes owning homes cheaper and expands the class of persons able to afford homes.

One byproduct of this system, however, is that it creates a class of people who cannot get mortgages anywhere—the people who fail to meet the standardized criteria. Under the older system, many of these people

³⁸ ZANDI, *supra* note 30, at 9-44.

³⁹ Hoak, *supra* note 1.

could get mortgages because they were applying to loan officers who either already knew them or otherwise would get to know them and either way became satisfied that they were good risks. After the standardization of the loan application process, however, that no longer happened. This created an underserved market for home loans—people who really could pay back the money if given a chance but who did not meet standardized underwriting criteria. Naturally enough, these people still wanted to borrow, and lenders wanted to lend to them. But, of all those people who did not meet the standardized underwriting criteria, figuring out which were the potential borrowers who could repay and which were those who could not seemed impossible. The transaction costs of individualized investigation and decision making were too high. Moreover, the lenders could not solve the problem by lending to all these people willy-nilly and just setting the interest rates high enough to cover their losses on the borrowers who would default, for an interest high enough to cover the inevitable losses would have priced out of the market even the good borrowers in the pool.

This created a genuine conundrum. How could lenders identify cost-effectively the good borrowers among all those who did not meet the standardized underwriting criteria? That was the problem the subprime mortgage was designed to solve. Such mortgages combine three key features: (a) low initial interest rates, often so low that the lender would lose money at such rates; (b) a reset of the rate after two or three years to a much higher rate, often a rate so high that the borrower could not make the payments at such rate; and (c) a very steep pre-payment penalty.

Now, how did such mortgages solve the problem of sorting out good borrowers from bad ones? Well, first, the pre-payment penalty makes sure that the borrower does not refinance the loan with another lender before the reset date; until the reset date, the borrower is locked into a relationship with the lender. During those two or three years, the interest rate is very low, and the borrower is, as it were, on probation. The lender is able to amass—relatively cheaply—much more information about the borrower, such as whether he makes the payments on the mortgage on time. When the reset date arrives and the borrower finds that he cannot make the payments at the higher rate, he has little choice but to return to his lender and ask to refinance the loan.

At this point, the lender has an option, as well as considerably more information about the borrower than he had when he first wrote the subprime mortgage. Perhaps the borrower has made all his payments on time, his credit score has improved, and his income has increased (the income of most people *does* increase during their working years) or has become more verifiable. In that case, the borrower may now meet the standardized underwriting criteria, and the lender will be able to refinance

the subprime loan with a conventional thirty-year, fixed-rate mortgage. On the other hand, perhaps the borrower has missed many of the payments on the loan, his credit score has deteriorated, and his income has decreased or become even less verifiable. In that case, the lender will foreclose on the loan, sell the house, and—at least if the value of the house has not crashed—recover enough money to cover his costs. Finally, if at the reset date it is not clear whether a borrower falls into either of these classes (maybe the borrower has made almost but not quite all the payments on time and has neither raised nor lowered his income or credit score), then the lender can repeat the process. That is, the lender will refinance the subprime mortgage with another subprime mortgage and revisit the question in another two or three years. In fact, a large percentage of the subprime mortgages written at the height of the bubble in 2006 were the second or even third refinancing of subprime mortgages written years earlier.

Thus, subprime mortgages were really sorting devices. They were a low-cost way of identifying, among the vast number of potential borrowers who did not meet standardized underwriting criteria, those that could, and those that could not, repay the money they wanted to borrow. Moreover, in the years leading up to 2006, subprime mortgages worked well. There was, however, an important assumption in the design of subprime mortgages: when the lender had to foreclose on a subprime loan, the property would be worth enough to cover the lender's costs—that is, the unpaid balance of the loan plus other expenses. In a world where housing prices were rising or at least basically steady, that was not a problem.⁴⁰ But if housing prices crashed, then, when the interest rate on the subprime mortgage reset, the borrower would probably not want to refinance the loan even if he had the financial capacity to do so. After all, who wants to pay a mortgage for more than the house is worth? The borrower would usually want to walk away, and often this was quite easy for the borrower to do. Sometimes, it was not worth the lender's time and effort to pursue a deficiency judgment against the borrower (many subprime borrowers had few other assets the lender could take), and in some state laws (notably California⁴¹ and Arizona,⁴² which, not accidentally, have some of the highest foreclosure rates in the United States),⁴³ actually prohibit the lender from seeking a deficiency judgment. Hence, in such cases the lender will foreclose on the house but will suffer severe losses.

⁴⁰ See STANDARD & POOR'S, *supra* note 23, at 2 (showing that, from 1988 to 2006, the S&P/Case-Schiller Home Price Index had almost always increased and had never declined more than that about 7% in a given year).

⁴¹ CAL. CIV. PROC. CODE § 580(a) (West 1976 & Supp. 2009).

⁴² ARIZ. REV. STAT. ANN. §§ 33-729, 33-814G (2007).

⁴³ Press Release, RealtyTrac, 1.9 Million Foreclosure Filings Reported on More than 1.5 Million U.S. Properties in First Half of 2009 (July 16, 2009) (available at <http://www.realtytrac.com/ContentManager/PressRelease.aspx?ItemID=6802>).

So, when lenders wrote subprime mortgages, they were taking the risk that housing prices would decrease. The lender was essentially going long on the housing market in ways that traditional lenders who required borrowers to make substantial down payments were not. In the midst of the housing bubble, however, the risk that real estate prices would fall sharply seemed remote. From 1988 to 2006, the S&P/Case-Shiller Home Price Index had almost always increased from year to year, and it had *never* declined as much as ten—let alone twenty—percent.⁴⁴ The essence of the bubble was that it seemed very likely that fundamentals had changed in a way that justified much higher housing prices. Recall that Bernanke had assured Congress that the run-up in housing prices was due to fundamental changes. In saying this, he was agreeing with the conventional wisdom among government officials, academic economists, and financial professionals. For banks and others writing subprime loans in the midst of the bubble, it was quite reasonable, therefore, to take the risk they did. It was a mistake, but making mistakes—especially being deceived in a market bubble when all the world is deceived with you—is not immoral. It is merely human.

Thus, I do not understand how lenders who wrote subprime mortgages were acting immorally. They understood very well what they were doing, including that they were going long on the housing market. That investment decision, like all investment decisions, involved a certain risk, but the lenders taking this risk were being compensated accordingly in the form of a higher return. All investments involve risk, and there is nothing immoral in making more risky rather than less risky investments.

Nor were subprime lenders treating their borrowers unfairly. True, many such borrowers did not understand the terms of the deal they made (for instance, that the rates would reset so much higher after a couple of years), and surely almost none of them understood how subprime mortgages were used to sort borrowers unable to meet standardized underwriting criteria. Indeed, even professional commentators of the moralizing sort seem not to grasp this point. But that is hardly proof of moral wrongdoing by the lenders. Even with relatively simple financial products such as homeowners insurance, consumers often fail to understand important terms of the contracts they sign. This is not because insurance companies are evil or their customers are stupid. It is because insurance policies are long, complex and difficult to read documents, and so obtaining information about them is costly for consumers, and consumers often have better things to do with their time. (Have you read *your* homeowners insurance policy? I have not read mine and have no plans to do so). From an economic point of view, consumers rely on market forces (i.e., competition among insurance

⁴⁴ STANDARD & POOR'S, *supra* note 23, at 2.

companies) to guarantee that the terms of the policy are reasonably favor to them. From a moral point of view, what matters is not whether consumers actually understand the deals they make, but whether those deals are objectively fair and reasonable.

And subprime mortgages *were* objectively fair and reasonable to the borrowers. If a borrower told the truth on the loan application, made payments on time, and generally lived up to his end of the bargain, then—except for the bursting of the housing bubble—the lender would have refinanced the mortgage, perhaps many times over, and the borrower would have eventually been able to get a conventional mortgage on terms he could afford. If the borrower did not make the payments or suffered other financial reverses, the lender would foreclose. But that, generally speaking, is the deal everyone buying a home with a mortgage loan thinks he is getting: if you don't make the payments, you don't get to keep the house. That is a perfectly fair and reasonable deal.

Subprime mortgages are going into default—and subprime borrowers are losing their homes—not because of any unfairness in the deal, but because subprime mortgages were predicated on the assumption that housing prices would stay basically steady or at least not decline sharply. Granted, most subprime borrowers did not understand this, but it is hard to see how this creates any unfairness. After all, whenever anyone buys a house, he assumes it is not going to lose value, that it is going to be worth at least as much in the future as it is the day he buys it. For, if the buyer thought it likely that the value of the house would decline, why buy it now? Why not wait till next year when the price is less? Thus, subprime borrowers were in fact themselves already making the key assumption on which subprime mortgages were based: that the houses they were buying would not lose a significant portion of their value. Had the importance of the assumption been called to their attention before they agreed to the mortgage, it is difficult to imagine that many subprime borrowers would have decided not to proceed. The risk was one that they knew, at least on some level, that they were taking.

Indeed, it seems to me that, so far from treating borrowers unfairly, subprime deals worked out much worse for *lenders* than for borrowers. For example, consider the following scenario. In early 2006, a borrower making \$30,000 per year took out a no-money-down, subprime mortgage to buy a \$200,000 house; the initial interest rate was 4%, but the rate would reset to 12% in two years. The borrower makes all the payments, paying \$8,000 per year to the lender for two years, which amounts to about \$666 per month. By 2008, the housing bubble has burst, and the house is worth only \$150,000. When the rate on the mortgage resets, the borrower's monthly payment goes from \$666 per month to \$2,000 per month—a payment the

borrower, whose income has increased to \$33,000 per year, cannot possibly afford. At that point, the buyer walks away from the mortgage, and the lender forecloses. The house is located in California or Arizona, and so the lender is legally prohibited from seeking a deficiency judgment.⁴⁵ This will be a psychological blow to the borrower, to be sure, and his credit rating will be impaired.⁴⁶ Still, the cause of the blow is not the unfairness of the terms of a subprime mortgage; it is that we were in a bubble, and the bubble burst. On any objective appraisal, however, the lender suffered more harm than the borrower. After foreclosure, the lender is out \$50,000 (the difference between the unpaid principal on the loan, \$200,000, and the value of the house, \$150,000), plus costs, plus the difference between the market interest rate and the abnormally low 4% the lender received for two years. The borrower, on the other hand, lived in the house for two years and in effect paid rent of \$666 a month—which is less than the median monthly housing cost for renter-occupied units in the United States⁴⁷ and less than the 28% of his income that traditional underwriting guidelines usually assume that borrowers can spend on housing.⁴⁸ It may not feel like it to the borrower, but he in fact got a pretty good deal: the lender subsidized his housing expenses for two years and gave him an option to buy the house if it held its value—which, it turns out, it did not. The lender lost money on the teaser rate, lost principal when it foreclosed, and lost all its other expenses. If anyone received a raw deal here, it was the lender, not the borrower. I do not mean that the lender got treated unfairly, of course: he too knowingly took a risk and lost; it is just that his losses are probably much worse than the borrower's.

B. Securitizations of Mortgages

But didn't lenders securitize all those mortgages and in doing so pass them off to unsuspecting investors, so that when the crash came, it was the investors, not the loan originators, who took the losses? In doing so, didn't the loan originators or investment banks securitizing the loans lie to the investors or, at the very least, "pass[] risk [on] to investors without disclosure"?⁴⁹ No, not really. That too is a myth.

The easiest way to see that subprime loan originators were *not*

⁴⁵ See generally James R. Hagerty & Nick Timiraos, *Debtor's Dilemma: Pay the Mortgage or Walk Away?*, WALL ST. J., Dec. 17, 2009 at A22.

⁴⁶ Cristine Gonzalez, *Strategic Default: The Real Cost of Walking Away from Your Mortgage*, CREDIT.COM, Jan. 8, 2010, <http://www.credit.com/news/economic-crisis/2010-01-07/strategic-default-the-real-cost-of-walking-away-from-your-mortgage.html>.

⁴⁷ U.S. CENSUS BUREAU, AMERICAN COMMUNITY SURVEY, GCT2514: MEDIAN MONTHLY HOUSING COSTS FOR RENTER OCCUPIED HOUSING UNITS (DOLLARS) (2008), http://factfinder.census.gov/servlet/GCTTable?_bm=y&-_box_head_nbr=GCT2514&-ds_name=ACS_2008_3YR_G00_&-_lang=en&-format=US-9T (listing data set for 2006-2008).

⁴⁸ Tara Siegel Bernard, *With Eyes Bigger Than Their Wallets, Homebuyers Are Forced to Revisit Old Rules*, N.Y. TIMES, Mar. 21, 2009, at B6.

⁴⁹ Hoak, *supra* note 1.

passing off all the risk of subprime loans to investors is to notice that, when the subprime market crashed, the loan originators suffered huge losses along with the buyers of mortgage-backed securities the originators had sold.⁵⁰ In fact, dozens of the loan originators went bankrupt, including Option One, Ameriquest, and New Century;⁵¹ Countrywide Financial probably would have gone bankrupt too had not Bank of America acquired it. Banks that underwrote securitizations of mortgage-backed securities such as Citibank, UBS, Merrill Lynch, and Bear Stearns all suffered huge losses, while Lehman Brothers went bankrupt.⁵² Why? Because these institutions were holding a great deal of risk on the loans they had securitized. Hence, when housing prices crashed and the value of the securities ultimately backed by the houses crashed along with them, the securitizing institutions took huge losses. It is clear, therefore, that these institutions were retaining much risk with respect to the loans they were securitizing; the idea that they were passing the risk on to others is simply inconsistent with the most basic facts of where losses fell in the subprime crash.

So how did the securitizing parties retain risk? Well, for one thing, before the securitizing party can securitize a pool of loans, it must amass them. This takes time, and so the securitizing party must carry the loans on its own books for a considerable period, often several months—warehousing them before it can sell them. If the loans go into default during this period, the risk is entirely on the securitizers. In fact, a good deal of the losses suffered by Citibank, Bear Stearns, and others arose in exactly this way. A loan originator thus has a strong structural incentive *not* to write loans likely to go into default quickly.

Even apart from that, however, the moral hazard problem the moralizers think they discovered—one party makes the credit decision, another bears the risk of repayment—has in fact been well understood by market participants for a very long time, and securitization transactions are carefully structured to make sure that the securitizer's incentives are aligned with those of the investors. First and perhaps most important, the securitizing party often retains the bottom (that is, last-to-be-paid) tranche of the securities; hence, the first dollar of loss on the loans would be for the account of the securitizer. If a loan originator were writing large numbers of bad loans, it would be setting itself up to take huge losses on these retained tranches. Second, especially for loan originators like Countrywide, the originator often retains the loan-servicing rights on securitized loans. These rights are valuable because they generate income for the originator for the

⁵⁰ Gorton, *supra* note 31, at 28.

⁵¹ See Worth Civils & Mark Gongloff, *Subprime Shakeout*, WALL ST. J. ONLINE, <http://online.wsj.com/public/resources/documents/info-subprimeloans0706-sort.html> (last visited Nov. 11, 2009).

⁵² Gorton, *supra* note 31, at 28.

life of the loan. If the loans go into default, these fees disappear. Because such fees were a major source of many loan originators' income, it would make little financial sense for loan originators to securitize loans that were likely to tank. They would never receive from such loans a major portion of the income necessary to make the deal on balance profitable for them. Finally, many securitization deals contain provisions that require the securitizer to repurchase bad loans—for example, loans that go into default within six months of being securitized. Combined, such provisions largely neutralize the moral hazard problem and result in the securitizer retaining substantial risk with respect to the securitized loans.

Most fundamentally, the whole theory of the moralizers—that securitization passes all the risk off to investors—ignores basic aspects of financial reality. Risk and return are related. If investors take more risk on securitized mortgages, they demand a higher return, which is to say they would pay less for the mortgage-backed securities. If a loan originator weakens its underwriting standards, it may make more loans, but it does not necessarily make larger profits because the price for which it can sell such loans declines to reflect the added risk the buyer is taking.

The obvious way for a loan originator to make more money by lowering its underwriting standards is to do this and *then conceal the fact* from investors—in other words, to commit securities fraud. Even this probably would not work in the long run, for the fraud would eventually be discovered and, at the very least, the fraudster would lose access to the funding sources necessary for its business model—but let us put this consideration aside. Did loan originators lower their underwriting standards and then fail to disclose this fact to the investors who bought their mortgage-backed securities? There is little evidence for this claim. There have been relatively few securities fraud cases against the major securitizers,⁵³ and in those that have been brought, the defendants have won.

For example, in *Plumbers' Union Local No. 12 Pension Fund v. Nomura Asset Acceptance Corp.*,⁵⁴ institutional investors who had purchased mortgage-backed securities sued the securitizing entity alleging various violations of the federal securities laws, all based on alleged misstatements or omissions from the prospectuses and the registrations

⁵³ The SEC has brought a civil enforcement action against Angelo Mozilo and two other former senior executives of Countrywide Financial, alleging that they committed securities fraud and violated the federal securities laws in various other ways—but the complaint does *not* include an allegation related to mortgage-backed securities that Countrywide sold in securitizations. Rather, the allegation is that Mozilo and others committed fraud with respect to *Countrywide's common stock* by misleading shareholders about how much risk *Countrywide was retaining* with respect to subprime loans. If true, the allegations in the complaint undermine rather than support the idea that Countrywide passed off risk to investors who purchased its mortgage-backed securities. See Complaint at 47-48, 50, SEC v. Mozilo, No. CV09-03994 VBF AJWx (C.D. Cal. filed June 4, 2009).

⁵⁴ No. 08-10446-RGS, 2009 WL 3149775, at *1 (D. Mass. Sept. 30, 2009).

statements containing them related to the securities. In particular, the plaintiffs alleged that “the registration statements falsely stated that the originators’ underwriting standards were intended to insure that prospective borrowers were creditworthy[,]” when in fact, the plaintiffs said, the underwriting standards of the originating banks “were never intended to filter out potentially risky borrowers” because “the banks were hellbent on originating as many loans as possible with an eye to short-term profit without any regard to the ability of the borrowers to repay.”⁵⁵ This, of course, is exactly the allegation made by the moralizing commentators who seek to explain the housing bubble on the basis of alleged moral wrongdoing. The court, however, had no trouble finding the claim meritless. Noting that the registration statements contained “numerous warnings flagging the permissive underwriting practices underlying the mortgage pools” backing the securities,⁵⁶ the court went on to state that the offering documents contained a “fusillade of cautionary statements” and revealed that “the vast majority of the loans . . . had been originated under limited documentation programs and that the borrower’s income as a result had not been verified.”⁵⁷ The plaintiffs’ argument that they were not on notice as to the originator’s actual underwriting practices, the court concluded, “begs credulity.”⁵⁸ Indeed, the court concluded that the offering documents described the relevant risks over and over again, with “deathless repetition”⁵⁹—a characterization anyone who has read such securities filings knows to be accurate.

The reason for the outcome in *Nomura* and cases like it is obvious. It’s not that investors thought they were getting low-risk assets and in fact were sold high-risk assets; it’s that they bought, and knew they were buying, assets with a certain risk level, which included a very remote risk of substantial losses in the very unlikely event that housing prices across the United States suffered steep declines.⁶⁰ That remote risk came to pass, and the securities lost value.

How did the risk come to pass? It came to pass because the United States housing market was suffering a massive bubble. When the bubble burst, housing prices crashed and interests in houses, including mortgages and securities backed by mortgages, turned out to be worth much less than everyone had thought. One of the risks of investing in mortgage-backed securities—a risk that was obvious to everyone involved and that

⁵⁵ *Id.* at *4-*5.

⁵⁶ *Id.* at *5.

⁵⁷ *Id.* at *6.

⁵⁸ *Id.*

⁵⁹ *Id.* at *5 n.6.

⁶⁰ Recall again that, for twenty years prior to the bursting of the bubble, the S&P Case-Shiller Home Price Index was almost always up year-over-year and never once lost more 7% of its value—much less the 20% or so it lost in the bursting of the bubble. STANDARD & POOR’S, *supra* note 23, at 2.

was routinely disclosed in the offering documents for mortgage-backed securities—was that if housing prices crashed, many more mortgages than usual would go into default, and thus the securities would lose value. Investors in mortgage-backed securities—generally banks, insurance companies, hedge funds and other sophisticated parties—understood this perfectly and discounted mortgage-backed securities accordingly.

For example, imagine that in 2005, an investment bank sold a collateralized debt obligation (CDO), and suppose that, if housing prices did not decline more than 20%, then the CDO would be worth \$1.005 billion. If housing prices *did* decline that much, however, the CDO would be worth only \$500 million. In the midst of the bubble, a commercial bank buying that CDO may have thought that there was a 1% chance that housing prices would decline 20%. So it would price the CDO at \$1 billion (that is, 0.99 multiplied by \$1.005 billion, plus 0.01 multiplied by \$500 million). In fact, that remote risk came to pass when the housing bubble burst; hence, the bank's CDO turned out to be worth only \$500 million, and the bank lost \$500 million on the transaction.

But that was the deal the bank signed up for. It was not that the securitizers lied or deceived the investors or even failed to disclose potential risks; it was, rather, that a risk everyone was aware of but thought was very remote actually came to pass. This is always what happens in a bubble: for a long time, people are systematically mistaken in thinking that a change in fundamentals justifies much higher prices for a class of assets, and when the mistake is discovered, the prices of those assets fall. Whoever happens to hold interests in those assets at the time bears the loss—in this case, both loan originators and holders of mortgage-backed securities. The whole thing is perfectly explicable without any moral wrongdoing by anyone.

Furthermore, securitizations and similar transactions have been around for decades and have been used successfully in any number of markets, not just with residential mortgages. Commercial loans, credit card receivables, automobile loans, student loans, lease payments for both real estate and equipment, loans financing private equity deals—all of these are either securitized or else parceled out in ways economically similar to securitizations. Reinsurance works analogously too. In none of these markets did the alleged moral-hazard problem create a bubble and a crash. Nor did a problem arise for decades in the market for mortgage-backed securities. This is powerful evidence that securitization was not the problem. The problem was something peculiar to the housing market during the years 2002 through 2007, and we already know what was peculiar about that market—very low interest rates were feeding the largest asset bubble in American history. Bear that in mind, and it is obvious there were going to be huge losses for everyone involved when the bubble burst.

Finally, this is not to say that the securitization of mortgages played *no role at all* in the housing bubble. By allowing investors around the world to invest indirectly in the United States housing market, the securitization of home mortgage loans vastly expanded the amount of capital flowing into that market, and this contributed to generating the bubble. But this effect of securitization involves no moral wrongdoing by anyone—just an unforeseen negative consequence of a perfectly legitimate activity, and a consequence that likely would never have resulted but for the mistakes of the Federal Reserve in managing monetary policy. There was also an analogous effect of securitization when the bubble burst: the losses from the crash were spread very widely. This may well be a good thing, for if a loss of the same size were concentrated among a smaller number of market participants, we would surely have seen even more bankruptcies and bank failures than actually resulted.

VI. BANKS LEVERAGING UP

What about all the banks and other financial institutions that increased their leverage during the bubble, sometimes reaching debt-to-equity ratios of thirty-to-one or more? By borrowing all that money, did they not take risks that were, at the very least, imprudent? If they should have known better, wasn't what they were doing immoral? Weren't they, in Professor Colombo's words, "putting profits before people"?⁶¹

Again, no, not really. All firms are more or less leveraged, and leverage increases not only risk but returns—that is, profits. In increasing their leverage during the bubble, the banks were indeed taking on more risk (and knew they were doing so),⁶² but they did this with the rational expectation of higher profits. But why did so many banks decide to do this simultaneously? Why were they all leveraging up at the same time? By this point, the reason for this should be obvious, for it is the same reason why *consumers* borrowed so much money during the bubble: because, during the bubble, credit was very cheap, and it was very cheap because the Federal Reserve had kept interest rates so low for so long.⁶³ Just as consumers had

⁶¹ Colombo, *supra* note 4.

⁶² While serving as a senior executive at Citigroup, Robert Rubin, who was Secretary of the Treasury under President Clinton, reportedly successfully urged the company to increase its leverage. See RICHARD A. POSNER, *A FAILURE OF CAPITALISM: THE CRISIS OF '08 AND THE DESCENT INTO DEPRESSION 2008-09* (2009).

⁶³ Banks and other financial intermediaries make money on the spread between the rate of interest they have to pay to borrow and the rate of interest they earn by lending. It turns out, however, that even keeping this spread constant, banks can make more money with lower interest rates than higher interest rates. For example, if the spread is 3%, it is better for a bank if its borrowing rate is 2% and its lending rate is 5%, than if its borrowing rate is 7% and its lending rate is 10%. This is so because when interest rates are lower, more people will want loans, and so the bank can capture the 3% spread on a larger loan base—and thus make more money. Banks, therefore, were very pleased when the Federal Reserve kept rates so low for so long. *Id.* at 40.

done, banks rationally borrowed more during the bubble because the cost of borrowing had fallen. That is the natural and inevitable effect of low interest rates.

But didn't the banks' leveraging up increase the risk of bankruptcy? Of course it did, but all businesses take on a small but positive risk of bankruptcy. There is no moral principle that determines the highest permissible risk of bankruptcy; there is only the fact that the higher the risk, the higher the expected return. Nor were bankers taking extraordinary risks during the bubble; they were taking perfectly rational risks that—because they were in fact in a bubble—came to pass contrary to people's reasonable expectations and had disastrous effects. As Judge Posner puts it:

In gauging the risk of calamity, the key probabilities [the banks] had to consider were that the rise in housing prices was a bubble and that if it burst house prices would fall by at least 20 percent. If both events came to pass, insolvency would loom. Suppose the best guess was that there was a 10 percent probability that the price rise was a bubble and the same probability that if it was a bubble house prices would fall by at least 20 percent. Then the probability that house prices would fall by at least 20 percent was only 1 percent (0.1×0.1), and so the risk of disaster would have seemed worth running.⁶⁴

I do not see anything immoral in that, just as I see nothing immoral in running other very small risks of disaster—like the risk that, if you ride the space shuttle, you might be killed in an accident (as in Posner's example, NASA engineers estimate that the risk of a catastrophic failure of a shuttle mission is about 1%).⁶⁵ If you choose to ride the space shuttle and you are killed in an accident, it would be ludicrous to say you were immoral for taking the risk. Some risks are worth taking, and they remain worth taking even when they come to pass and the venture works out very badly.

Of course, it was not just one bank, or a small number of them, that leveraged up during the bubble; it was virtually all of them. This fact alone, incidentally, is strong evidence that it was not an epidemic of irrational greed but a rational response to market conditions as reasonably perceived that led to the increase in leverage. However, because all the banks leveraged up simultaneously, the risks of bankruptcy they were each taking became correlated. That is, the events that would cause one of them to fail would also likely cause them all to fail. Now, a large number of

⁶⁴ *Id.* at 78-79.

⁶⁵ See R. P. Feynman, Personal Observations on Reliability of Shuttle, in 2 REPORT TO THE PRESIDENT, PRESIDENTIAL COMM'N ON THE SPACE SHUTTLE CHALLENGER ACCIDENT F app. at F-1 (1986), available at <http://history.nasa.gov/rogersrep/v2appf.htm>.

simultaneous bank failures is extremely dangerous for the economy because it steeply reduces the supply of credit, puts many people's savings at risk, and has a huge negative effect on confidence. These costs fall not only on the banks and their shareholders but on everyone involved in the economy. Hence, when the banks leveraged up at the same time, they externalized a significant part of the risk. Wasn't that immoral?

By now you can guess the answer: no, it was not. Consider your own behavior during the current recession. Like most consumers, because you are worried about your financial future (for example, that you may lose your job), you have probably cut back on your spending and increased your savings. That is a perfectly rational thing for you to do. Even more, the moralizing critics, who think it was morally wrong for people to borrow and spend so much money during the bubble, doubtlessly think that it is morally praiseworthy for you to be so thrifty now. One effect of your spending less and saving more, however, is that you are making the recession worse. In a recession, demand falls below the capacity for output, which means that producers have to cut costs, most importantly by laying off workers. When workers are laid off, they spend less than they did before, which lowers demand even more and leads to more layoffs. A vicious cycle is started, and it is not broken until demand stabilizes and starts rising again. What is best for you individually, of course, is just what most consumers are currently doing—saving more and spending less—but what's best for the economy as a whole would be just the opposite—saving less and spending more. In being thrifty, you are externalizing part of the costs of your actions, because part of those costs will fall on other participants in the economy. Are you immoral because, in doing what is best for you and your family, you are externalizing part of your costs by making the recession worse? Let the moralizer who is without sin be the first to spend a dollar.

In the midst of the bubble, the banks were in a similar position. What was best for each bank individually was to take advantage of the Federal Reserve's low interest rates by leveraging up, taking on more risk, and—hopefully—making more money. From a societal standpoint, however, this was not a good thing because it created a correlated risk that many banks could become insolvent simultaneously, and that would be a disaster for everyone. In such cases, however, we cannot expect banks—or anyone else for that matter—to abstain from acting in their rational self-interest because of the infinitesimal effect their particular actions would have on the common good of society. The effect of any individual or firm's actions is too small and too remote to expect them to take account of it. Moreover, if, during the bubble, a bank had declined to follow the rational strategy its competitors were following, that bank would have been significantly less profitable, which would cause the value of its stock to fall, which would raise the cost of its equity capital and make it even less

profitable. Its shareholders would likely have complained loudly and perhaps even replaced the directors with others willing to follow the herd. Neither bank executives nor consumers can reasonably be expected to neglect their own interests and those of their families to help the broader economy.

VII. CONCLUSION

This quick tour through the financial crisis began at the Federal Reserve, where Alan Greenspan and his colleagues on the Federal Open Market Committee made some mistakes in the early years of this decade by keeping interest rates very low for a very long time.⁶⁶ That made available in the markets huge amounts of credit, and that money had to go somewhere. Once this mistake was made, the rest was practically inevitable. Because of the natural tendency of real estate to attract debt, the subsidies that the United States provides for individual home ownership, and certain innovations in the financial markets such as subprime mortgages and the widespread use of securitizations, much of the tsunami of money entering the economy poured into the United States residential real estate market. This allowed consumers to borrow money very cheaply in order to buy houses, and that drove housing prices up sharply. While all this was going on, however, there was genuine uncertainty as to the cause of the run-up in housing prices. Most people thought—mistakenly, albeit with good reason—that the Federal Reserve had discovered how to keep interest rates low without triggering inflation and that the rise in housing prices was due to fundamental changes in the housing market such as robust growth in family income, steady rates of household formation, and various limits on the supply of housing. Most of the smartest and best informed people in the world accepted this theory at the time. But, we now know, they were wrong. The supposed changes in fundamentals—both as to interest rates and as to housing—were illusions. We were in a gigantic bubble. When the bubble burst, housing prices crashed, as did the value of indirect investments in housing such as mortgage-backed securities. The losses, and then the ripple effects from them, were tremendous—enough to destroy Bear Stearns and Lehman Brothers and, had the government not acted swiftly to recapitalize them, who knows how many other major banks.

That is the story of the great financial crisis of 2007 to 2009. The whole thing is explicable without positing any villainy by anyone. Even if Alan Greenspan and other members of the Federal Open Market Committee were solely responsible for the whole thing, they were not *morally* at fault; they just made some honest policy mistakes that, at the time, virtually everyone thought were right. Why then are so many people, including

⁶⁶ Again, see *supra* note 16 for my current reservations about the views expressed in the text.

people who really ought to know better, so anxious to assign moral blame?

There, I think, we touch on a strange truth about human nature. It is deeply unnerving for us to think that, even when everyone is behaving rationally and honestly, the result can be catastrophe. It reminds one of the horror of Greek tragedy. Recall Oedipus, who, warned that he would kill his father and marry his mother, did all he could to avoid that fate, but nonetheless ended up killing his father and marrying his mother. Such events highlight the limits of the human condition; they remind us how limited our cognitive and other powers really are. Hence, when something terrible happens, it is much more emotionally satisfying for us to identify a villain and hang him from a light post in the town square. That way, justice is done, and order is restored to the universe. We achieve catharsis. By contrast, it takes a philosophical temperament to survey the limits of the human condition and nod at them ironically.

Although the search for villains behind the financial crisis is human and understandable, a felt need does not make a real fact. Moralizing critics blame virtually everyone involved in the housing market, but in reality virtually all of these people were entirely innocent. They were trapped in a market bubble, and certainly none of these people, whether individually or even collectively, engaged in any *moral* wrongdoing that *caused* the bubble and the burst. As for the moralizing critics, they could do with some self-examination. Blaming innocent people for things that are not their fault is immoral.

