Abstract:
The Varieties of Incentive Experience

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We often speak of incentives as if there is only one kind, when in reality there are many. This study uses the financial crisis of 2007-2012 as a laboratory for examining the variety of incentives and distinguishes five key types of incentives. First, are natural incentives in which purely non-human conditions provide incentives to act in certain ways. Second, “strictly-speaking” incentives arise when one party makes a specific conditional offer of something of value in order to elicit a particular behavior. Third, socially-emergent incentives arise out of the interplay of human elements to create conditions that make certain behaviors attractive, but that do so without anyone intentionally creating those incentives. Fourth, governmental and other human institutions intentionally create institutionally-constructed incentives to induce particular behaviors, and these incentives are often accompanied by a host of unintended consequences. That is, the institutionally-constructed incentives to do one thing also constitute socially-emergent incentives to do other things that are completely unintended. Fifth, and finally, cooperative-game incentives are a type of socially-emergent incentive. These incentives give two or more parties incentives to pursue a particular course of action while, often, denying that the behavior is related to the incentives that they confront.
Fear…. “one tremendous incentive to self-mortification.”
—William James, *The Varieties of Religious Experience*

The most important development in economics in the last forty years has been the study of incentives to achieve potential mutual gains when the parties have different degrees of knowledge.
—Kenneth J. Arrow, 1972 Nobel Laureate in Economic Sciences

I. Introduction
For some decades now, the idea of incentives has played a key role in economics as well as in public policy analyses and implementations. Nonetheless, the intellectual range of this absorption with incentives has been quite limited, despite the importance ascribed to it by Kenneth Arrow’s quotation. As Arrow implies, the implicit understanding has been that there are gains to be achieved by parties to an agreement, and while Arrow does not specify that the agreement has exactly two parties, the most typical context studied in financial economics, at least, has been the problem of incentive alignment between a principal and the principal’s agent. Thus, in their article, “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,” we find Jensen and Meckling stating: “The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities of the agent.”

In contrast to this limited conceptualization of incentives as prevailing in an arrangement between two parties, the actual use of the term is much broader. The quotation from James’s *The Varieties of Religious Experience* highlights a very different conception of incentive in which an emotion, in this case the emotion of fear, acts as an incentive. This paper explores some of these broader conceptualizations of incentives and shows how the quintessentially economic understanding of this term constrains our understanding of the full role that incentives play in our discourse and throughout our society.

To do this, the paper first considers some recent understandings of incentives in section II. Section III attempts to develop a taxonomy of the very different kinds of incentives that shape all our lives, and it illustrates the variety of roles played by incentives in the originate-to-distribute model of mortgage creation, the economic structure that played such a pivotal role in the financial crisis of 2007-2012. Section IV concludes the paper.

II. The Range of Incentives
It is difficult to overstate the impact that Jensen and Meckling’s seminal paper has had in economics and finance, and they certainly succeeded in focusing the conceptualization of incentives on the principal-agent relationship. And even within this narrow focus, they helped to make the problem of executive compensation the key exemplar of the principal-agent relationship and a laboratory in which economists have studies the power of incentives. Jensen and Meckling were not, of course, the first to notice the possible misalignment of incentives
between principal and agent, and they even quote a famous passage from Adam Smith’s *Wealth of Nations* in this connection:

The directors of such [joint-stock] companies, however, being the managers rather of other people’s money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master’s honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.6

Also, long after Smith and well before Jensen and Meckling, incentives became important in our understanding of human behavior, particularly economic behavior. Near the beginning of the twentieth century, Frederick Taylor described the best system of management currently being practiced as the management of “initiative and incentive,” and it was this system that Taylor sought to replace with his principles of scientific management. According to Taylor’s account of the theory then current, to obtain the worker’s best effort or the worker’s “initiative,” the manager must provide the worker with an “incentive”:

The writer repeats, therefore, that in order to have any hope of obtaining the initiative of his workmen the manager must give some special incentive to his men beyond that which is given to the average of the trade. This incentive can be given in several different ways, as, for example, the hope of rapid promotion or advancement; higher wages, either in the form of generous piece-work prices or of a premium or bonus of some kind for good and rapid work; shorter hours of labor; better surroundings and working conditions than are ordinarily given, etc., and, above all, this special incentive should be accompanied by that personal consideration for, and friendly contact with, his workmen which comes only from a genuine and kindly interest in the welfare of those under him. It is only by giving a special inducement or “incentive” of this kind that the employer can hope even approximately to get the “initiative” of his workmen. . . . Broadly speaking, then, the best type of management in ordinary use may be defined as management in which the workmen give their best initiative and in return receive some special incentive from their employers.7

Thus, more than 100 years ago, management thought was using the idea of an incentive as something approximating one of its current meaning, but was applying the term in a broader context than the principal-agent relationship alone.

Even if we restrict our consideration of incentives to the field of economics, the idea of incentives is certainly not constrained to a relationship between two parties. In a different context from the one cited at the beginning of this paper, Kenneth Arrow discusses incentives when there is really not a second identifiable party. In his paper, “Gifts and Exchanges,” Arrow examines Richard Titmuss’ famous analysis of the normative difference between a system in which human blood is sold and an alternative arrangement in which blood is donated as a gift.8 Examining the question from an economic point of view, Arrow is interested in the incentives facing a commercial blood donor, particularly one who is poor and ill and he uses the term “incentive” in two contexts. First:

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Any-one whose motive for giving is to help others, but who suffers from hepatitis and is aware of the implications of this, will of course refrain from giving. On the other hand, a commercial blood donor, especially one driven by poverty, has every incentive to conceal the truth.

and second:

It also appears that commercial blood-giving leads to unanticipated risks to the donors, though much less serious than those to the recipients. Commercial blood donors have some incentive to give blood more frequently than is desirable from the point of view of their health.9

In the circumstances Arrow envisages, the prospective commercial blood donor finds himself with incentives, but second party provides an incentive or induces a behavior. Instead, the donor remains detached from any specific second incentivizing party and merely confronts a social arrangement that rewards (or incentivizes) certain behaviors.10

To a considerable degree, the public choice literature is consumed with studying incentives as they affect actors in the political arena. In The Calculus of Consent: Logical Foundations of Constitutional Democracy, Buchanan and Tullock repeatedly invoke the word “incentive,” particularly in reference to strategic bargaining contexts. One instance will give the general tenor of their usage of the term: “The raison d'être of market exchange is the expectation of mutual gains. Yet, insofar as markets are competitive, little scope for bargaining exists. Individuals have little incentive to invest scarce resources in strategic endeavor.”11 Here, and in other similar contexts, the incentive acts essentially as a prospective reward that might be achieved by strategic maneuver, a reward fully detached from, and certainly not granted by, any second party.

Similarly, in his monograph, “Public Choice: The Origins and Development of a Research Program,” Buchanan writes: “At base, the central idea emerges from the natural mindset of the economist, whose explanation of interaction depends critically on the predictable responses of persons to measurable incentives. If an opportunity that promises to yield value arises, persons will invest time and resources in efforts to capture such value for themselves.” Slightly later he says:

At issue here is the degree to which net wealth, and promised shifts in net wealth, may be used as explanatory incentives for the behavior of persons in public choice roles. Public choice, as an inclusive research program, incorporates the presumption that persons do not readily become economic eunuchs as they shift from market to political participation. The person who responds predictably to ordinary incentives in the marketplace does not fail to respond at all when his role is shifted to collective choice.12

In Buchanan’s first quotation, he portrays an incentive as merely a goal to be obtained by following some course of action, rather than as a reward stipulated by a second party for some performance or achievement. Even more strikingly, Buchanan’s second quotation now casts incentives—those same goals that can be obtained by some course of action—as explanatory variables in the public choice research program.
As a final example from the world of economics, consider the recent book by Richard Thaler and Cass Sunstein, *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Thaler and Sunstein recommend a program of “libertarian paternalism” in which policy makers, government agencies, institutions, employers, or just ordinary persons create environments in which other people make decisions. As such one is a “choice architect” if one “has the responsibility for organizing the context in which people make decisions.” Thaler and Sunstein “… argue for self-conscious efforts, by institutions in the private sector and also by government, to steer people’s choices in directions that will improve their lives. In our understanding, a policy is “paternalistic” if it tries to influence choices in a way that will make choosers better off, as judged by themselves.” In other words, we might say that a choice architect is one who gives people a nudge to go in a certain direction, a role for the choice architect that some might compare to that of being a “noodge.” Thaler and Sunstein connect their idea of paternalistic nudges to incentives by characterizing some portion of humanity as Econs—those who respond promptly and “correctly” to incentives. Thaler and Sunstein repeatedly characterize incentives as external rewards that can be obtained by a certain course of action, and the choice architect acts to artfully arrange the context of decision-making in a way that will lead people to make “better choices” for themselves. Said another way, the choice architect arranges the decision context so that stronger incentives lie with the “better choices.”

At this point we come full circle in a certain way to the world of incentives of 100 years ago. When Taylor advanced his principles of scientific management they were widely seen as oppressive and unethical. As Ruth Grant notes of this era: “‘Incentives’ came into the language in an atmosphere of heated controversy, moral and political, in American industry. Incentives were offered by people with power to people without it, and everybody knew that.” And Thaler and Sunstein, writing 100 years later, are aware of the same objection to the program they advance: “A general objection to libertarian paternalism, and to certain kinds of nudges, might be that they are insidious—that they empower government to maneuver people in its preferred directions, and at the same time provide officials with excellent tools by which to accomplish that task.” While we may well commend Thaler and Sunstein for recognizing the problematic ethical dimension of the program they favor, their mention highlights the general neglect of the ethics of incentives, a topic to which we now briefly turn.

In a pair of papers, Ruth Grant has done an admirable job of pointing out the history of the idea of incentives and in tracing how the use of the word has changed and come to dominate economic and public policy discourse. Her recent book, *Strings Attached: Untangling the Ethics of Incentives*, extends that analysis and then focuses on the ethics of what she calls incentives, “strictly speaking”:

Incentives “strictly speaking” are a particular kind of offer: 1. an extrinsic benefit or a bonus that is neither the natural or automatic consequence of an action nor a deserved reward or compensation; 2. a discrete prompt expected to elicit a particular response; and 3. an offer intentionally designed to alter the status quo by motivating a person to choose differently than he or she would be likely to choose in its absence.

Of course Grant realizes the much broader scope of the term “incentives” as it is used in our society, even to embrace such procedures as “choice architecture,” as advocated by Thaler and Sunstein.
The many uses of the term “incentive” embrace wildly different and quite extensive uses. Thus, it is not peculiar to say that “The bonus plan gives the executive the incentive to raise quarterly profits” or to say that “The presence of the tiger provided a strong incentive to stay out of the cage.” And while Grant’s analysis of incentives, “strictly speaking” is a quite useful one, it is desirable to realize how extensive and diverse our uses of the idea of incentives really are. To that end, this paper explores the variety of incentives, “broadly understood” operating in the financial crisis that began in 2007 and focuses particularly on the incentives at play in the originate-to-distribute model of mortgage production that characterized the run-up to the largest financial crisis since the Great Depression.

Before turning to a discussion of the financial crisis, it is necessary to state some of the limitations of this study. The analysis focuses only on what we might regard as positive incentives rather than disincentives. A positive incentive is some additional benefit that might result from pursuing a certain course of action compared to the results expected from the course of action anticipated without the impact of incentives. A negative incentive, or disincentive, might be some unfavorable consequence that would result from failing to undertake a specific course of action. Said simply, this paper considers only carrots, not sticks, as incentives.

As noted above, Ruth Grant considers the ethics of incentives and contrasts two ways of thinking about incentives. She points out that many advocates of using incentives as elements of public policy emphasize the difference between coercion and incentives. Instead, Grant highlights the obvious use of incentives as an element of control and suggest that we might think of reasons and rational discourse as a way of guiding behavior as opposed to the promise of rewards or incentives as an inducement for people to behave in a certain way.

Once we start to think about incentives primarily as an instrument of control, they cease to appear quite so benign. For example, there is a considerable literature on “coercive offers.” While the exact meaning of a coercive offer remains elusive, a coercive offer is essentially the holding out of some benefit that the recipient of the offer has no choice but to accept or as an offer “…that one cannot reasonably refuse…”20 Not surprisingly, the plausibility of there being coercive offers depends on ones view of freedom. Those who emphasize the importance of positive rather than negative liberty, to use Isaiah Berlin’s distinction, more willingly accept that some offers may be coercive.21 Alternatively, those who focus on negative freedom tend to deny that any offer of a benefit that improves ones ex ante position can be coercive. For example, libertarians generally deny that there can be coercive offers.22 This study abstracts from the question of whether there can be coercive offers, and all of the specific examples to be considered seem clearly free of any danger of being regarded as coercive offers.

When we begin to think of incentives as an element of control, it is not difficult to conceive a spectrum of controlling incentives. At the generous end of the spectrum, we could imagine some item of value to be awarded for a specific achievement, with absolutely no ill result from failing to pursue a given course of action. For example, the winning of an Olympic medal might be an incentive for someone, but the failure to obtain a victory and win a medal does not diminish the initial position of the person who aspires to win a medal but fails. But as we imagine a choice architect arranging conditions to give one every stronger nudges, the idea of incentives as control and incentives as elements in a coercive offer gain resonance. For the fear is, of course, that very strong arrangements of incentives soon give way to out and out control as advocated recently by Sarah Conly in her new book, Against Autonomy.23 No one study can deal with all of the issues surrounding the concept of incentives, and this study abstracts from the problem of coercive offers and incentives as an element of control. In addition, the incentives on
offer in the subprime housing market of the early 2000s were so lucrative that they generated active and even rabid pursuit.

III. A Taxonomy of Incentives
The world of incentives is very broad. At one end of the spectrum we have Grant’s incentives construed in a manner that is “strictly speaking”—an intentional offer to a person to elicit a particular behavior. Let us establish the other extreme as a “natural incentive,” some physical (non-social, non-human) state of affairs that gives someone a reason or motive to act one way rather than another. For example, an impending storm provides an incentive to seek shelter, the incentive being the opportunity to remain warm and dry. I believe that all incentives lie along this spectrum and that further, it is possible to adduce examples of incentives that occupy almost all shades of the spectrum.

Of course, the interesting cases of incentives, especially from the point of view of economics, are those that involve a human factor, and these were certainly the ones in play in the financial crisis. However, no incentive works in a vacuum from the surrounding reality, and even when a recognizable party offers an incentive, the efficacy of that incentive depends on the surrounding physical and social context.

An ideal taxonomy of incentives provides clear-cut demarcations between different types of incentives and enables anyone to correctly assign a particular incentive example to its rightful slot within the classification system. But the actual deployment of incentives often exemplifies a blend of different pure types of incentives. Further, from an external view of an incentive arrangement it often remains difficult to specify the exact types of incentives at play. As an added complication, incentive arrangements might be intended to elicit one kind of behavior, but the recipient of the incentive might in fact be incentivized to behave in some quite different or even contrary manner. Finally, incentives can be offered or constructed in a manner that is highly ambiguous, such that the provider of an incentive does not fully understand how the incentive will actually operate, and the recipient of the incentive may receive a completely erroneous understanding of the behavior desired by the grantor of the incentive or may act to capture the incentive through behavior that is even detrimental to the incentivizer. All of these dimensions of incentives were at play in the originate-to-distribute model of mortgage production, so it provides a laboratory for understanding the varieties of incentive experience.

As Figure 1 illustrates, there are ten principal individuals or roles in the originate-to-distribute sequence:

Borrower
Mortgage Originator
Mortgage Broker
Appraiser
Due-Diligence Firm
Mortgage Servicer
Securitizer
Rating Agency
Ultimate Investor
Regulatory Agencies and Officials
We consider each role in turn, which provides the opportunity to define additional types of incentives and to study the role those incentives played in the behavior of each party. In doing so, I will briefly summarize the key incentives I believe they faced, but I will not defend the impressionistic treatment I offer nor scrupulously list all the incentives that may have been operational. Instead, the goal here is to use the financial crisis to illustrate different types of incentives and to develop a taxonomy of incentives. However, I have addressed the historical nature of these incentives and explained them at some length in other contexts.24

**The Borrower**—During the residential housing boom that characterized the run-up to the financial crisis, many borrowers found themselves with access to easy mortgage credit in amounts and on terms not previously available, with this feast of credit set against seemingly never-ending increases in the price of homes across the United States. Against this background, and sometimes at the prompting of unscrupulous mortgage lending intermediaries, many borrowers took mortgages in amounts and on terms that were unsustainable or sustainable only if housing prices continued their rapid escalation. It is natural to say that the prospects of a high return on a highly-leveraged investment with generous financing terms provided the borrower with a strong incentive to buy a home and take a mortgage.

The incentives in this situation were clearly not a matter natural incentives, as homes are bought and mortgages granted only in a well-developed economy. Further, the incentives were not Grant’s narrow strictly-speaking incentives, as no identifiable party offered the incentive, nor was any incentive offered to a particular individual, at least not according to the way I have characterized the prospective borrower’s position. Rather, the borrower’s incentives arose from complicated institutional developments that made taking a mortgage to buy a house appear attractive. In an important sense, the prospective borrower faced incentives that were socially-emergent.

A socially-emergent incentive arises out of the interplay of humans and their institutions that make certain behaviors attractive. But in a purely socially-emergent incentive, there is no intention to induce a certain type of behavior and there no particular grantor or recipient of the incentive can be identified. Instead, a socially-emergent incentive arises purely from the interplay of human individuals and their institutions with no intention of stimulating a certain type of behavior on the part of any individual or other institution.

For reasons to be explained shortly, the borrower’s incentives were not purely of the socially-emergent type. However, there are some arrangements that create purely socially-emergent incentives, or at least that are very nearly purely socially-emergent, such as many customs of courtesy. A gentleman has an incentive to hold a door for a lady because the existing social fabric rewards (or at least used to reward) such behaviors. In such a situation, no party offers an incentive, nor are the incentives at play in such social encounters aimed at any prospective recipient. As another example, young men want their own automobiles, incentivized to obtain them, at least in part, by the existence of impressionable young women (or at least by the male belief that such impressionable females exist). This incentive to obtain one’s own “ride” resides inherently in the social arrangements that prevail in U.S. society. No party designed or sought to offer such incentives to anyone. Rather, the incentives emerged from the organic development of society.

Some incentives facing the mortgage borrower were also the product of consciously designed social policy, and so not of the socially-emergent type. For decades in the United States, all levels of the federal government have advocated and sought to stimulate increasing home ownership. Presidential pronouncements and encouragement going back to the early...
twentieth century, and reinforced by virtually every president of both parties in the ensuing years, eventually found their substantiation in concrete policies designed to incentivize greater home ownership. For example, the mortgage-deductibility of interest has long-provided a substantial incentive to own a home. The Community Reinvestment Act of 1977 was designed to attack discriminatory mortgage lending practices and to expand home ownership. This Act received new attention and more vigorous enforcement through the National Homeownership Strategy of the Clinton era, which explicitly sought to increase the percentage of Americans living in their own homes. In short, governmental institutions of the United States actively sought to change incentives in the housing market, with the clear intention of changing both the behavior of lending institutions and prospective home-buyer.

Let us call such incentives institutionally-constructed incentives. Those who promulgate institutionally-constructed incentives are essentially the choice architects that Thaler and Sunstein seem to have most clearly in mind, even though they allow that a single individual can also be a choice architect. An institutionally-constructed incentive is one created by some body composed of or embracing many human individuals that formulate conditions or policies that alter the choice environment in which people make decisions. Paradigmatically, governmental agencies perform this function. For example, the income tax code of the United States has hundreds or thousands of provisions designed to alter the behavior of taxpayers. Governments establish tax regimes and grant waivers from taxes to promote some perceived social good and to incentivize certain behaviors while discouraging others. Below the governmental level, almost all organizations establish policies that provide incentives. For example, every firm establishes compensation policies and reward programs explicitly designed to induce certain behaviors, and we will see some of these at play as we consider other actors in the originate-to-distribute model.

These institutionally-constructed incentives are unlike the person-to-person or strictly-sounding incentives on which Grant concentrates and that seem to be contemplated by the Arrow quotation that begins this paper. Instead, institutionally-constructed incentives generally apply to many people. Because the policies that extend these incentives are general and people are so varied, a institutionally-constructed incentive scheme often elicits quite varied responses from diverse individuals. In general, it must be the case that it is easier to construct incentives when the grantor offers an incentive to a particular person who is well-known to the grantor.

Institutionally-constructed incentives are also the natural habitat of unintended consequences. These broad-scale incentives must be, by their very nature, available to many people at the same time and on the same terms, especially in a democracy. Humans, in their perverse diversity of circumstances, values, and temperament, continue to respond to such incentives in ways never contemplated and often not desired by those who construct them. This aspect of social policy is broader than the question of mere incentives and has been long-recognized, well-understood, and devastatingly-critiqued by Frédéric Bastiat and Robert Merton and has received withering attention from many who have followed in their footsteps.

In sum, the prospective mortgagor in the financial crisis made his decisions about mortgages in an environment greatly altered by the presence of both socially-emergent and institutionally-constructed incentives. The dominant collective effect of these incentives was to stimulate borrowing, to focus attention and hopes on anticipated gains in housing prices, and to excite the pursuit of houses beyond the reasonable means of many buyers.

The Mortgage Broker—During the financial crisis the typical mortgage broker played the role of an intermediary between the prospective mortgagor and the mortgage originator, the financial institution that actually grants mortgage loans. In the ordinary event, the originator
compensates a mortgage broker by paying a percentage of the principal amount of the mortgage, with payment occurring when the mortgage closes. What happens to the home owner or the lender after the closing is essentially irrelevant to the mortgage broker.

Under this arrangement, the mortgage broker faced a very clear and simple incentive to get as many deals done at as high a loan value as possible. Given the classification of incentives that we are developing, the mortgage broker’s incentives were clearly of the socially-emergent variety. No identifiable party constructed the industry in a manner designed to give the mortgage broker the role she came to have, and no party actively constructed the incentives that confronted the mortgage broker, so the incentives were not institutionally-constructed, nor were they like Grant’s strictly-speaking incentives.

In retrospect, the social perversity of these incentives is obvious, and even in media res the same should have been obvious to any thoughtful observer—because the structure of these arrangements encouraged the mortgage broker to be indifferent to the welfare of both the home buyer and the lending institutions. Nonetheless, this arrangement persisted, and we will see that other elements of the originate-to-distribute chain also exhibit instances of equally perverse incentives.

The Mortgage Originator—As just described, the mortgage originator is the financial institution that actually lends money to the prospective home owner. A few decades ago, the typical mortgage originator would have been a local savings and loan association (S&L), and the S&L would typically hold the mortgage as an asset on its books for the life of the mortgage. Under this arrangement, the S&L had powerful incentives to grant only reasonable loans and to perform scrupulous due diligence before lending.

In the originate-to-distribute arrangement, the mortgage lender grants a mortgage with the clear intention of selling the mortgage as quickly as possible. This sale generates an immediate profit on the mortgage and frees the principal amount of the mortgage to enable the origination of another mortgage. In the ordinary event, the originator bore financial responsibility for the quality of its mortgages for only 90 days. If the borrower did not default within 90 days after the originator sold the loan, the originator escaped all responsibility for any subsequent loss.

The entire originate-to-distribute model was never designed by any central intelligence. Instead, it was an organic outgrowth that emerged from the interaction of many parties. As such, many of the resulting incentives that characterize the originate-to-distribute model and that led to the financial crisis were of the socially-emergent, rather than institutionally-constructed, type. And this seems to be true of the main incentives confronting the mortgage originator. No one intentionally designed a system in which the mortgage originator had clear incentives to grant as many mortgages as possible and sell them off as quickly as possible while avoiding almost all of the financial liability for bad lending decisions that were injurious to the home buyer and unsupportable from an economic perspective.

The Appraiser—During the housing boom in the run-up to the financial crisis, the appraiser who evaluated the collateral of the property that would underlie a prospective mortgage was selected, hired, and paid by the mortgage originator. As a professional, the appraiser has a fiduciary obligation to render an accurate professional judgment of the value of a subject property. However, in an environment in which the originator seeks to initiate a high volume of mortgages and sell them as quickly as possible, the originator requires an appraisal for the mortgage file that will support the lending decision. An appraiser who estimates too low a value merely impedes the process.
In such a circumstance, one might imagine that the originator tells the appraiser what value to report. But such blatant dishonesty is hardly necessary. Any appraiser who wishes to be successful in the environment of the real estate boom quickly came to understand what was expected of her. Those appraisers who too frequently reported bad news in the form of a low appraisal would simply not be selected for further assignments. Instead, the originator would merely shift business to appraisers capable of providing the desired answers.

This situation illustrates a kind of incentive that we have not considered to this point, a cooperative-game incentive. In the situation described, the originator and appraiser have well-aligned incentives that need never be spoken. The originator needs a high appraisal, and the appraiser needs continued employment. The two parties can work together to get the job of floating new mortgages done, and they never need to speak an inappropriate command or explicitly offer an immoral incentive. Rather, in a cooperative-game incentive, two or more parties face incentives in which their interests lead them to cooperate in certain ways.

As described, a cooperative-game incentive is either a type of socially-emergent or institutionally-constructed incentive. In the case of the appraiser, both elements are at play. Insofar as it is merely social custom to require an appraisal showing adequate value to support a lending decision, the cooperative-game incentives shared by the originator and appraiser are socially-emergent. However, if rules promulgated by the originator’s regulators require such an appraisal, then this cooperative-game incentive would be a subclass of an institutionally-constructed incentive.

Cooperative-game incentives, generally considered, arise in many contexts. For example, the financial well-being of a husband and wife are closely tied, and this fact gives both spouses a reason to cooperate in managing the household’s income and expenditures. But cooperative-game incentives are often perverse or illegitimate in some way. The term “game,” highlights those situations in which well-aligned incentives can be socially perverse and lead to immoral conduct. It is often the case that cooperative-game incentives need never be made explicit. Such was the case with the incentives linking appraisers and originators. Instead, both parties understand the incentives they face and understand the incentives of parties participating in their cooperative game. And this mutual comprehension of incentives can lead to cooperation that is perverse and immoral.

In the aftermath of the financial crisis, regulators instituted new rules to govern the appraisal process. Specifically, appraisers are drawn randomly from a pool and assigned to new requests for appraisals. This policy should make appraisers’ incomes independent of the whims of originators. However, the actual practice under such arrangements is not so benign. The appraiser still often receives a copy of the sales contract showing the contracted price before submitting an appraisal. It has not been unknown for the appraised value to exactly equal the contract price, creating what can be quite a stunning coincidence.

The Mortgage Servicer—After a mortgage is granted, it must be serviced. The mortgage servicer typically collects the mortgage payments and forwards those receipts to the rightful recipient. In addition, the mortgage servicer also manages the escrow account if there is one, collecting property-tax payments, ensuring that the mortgagor maintains insurance on the property, and so on. As compensation, the servicer receives an annual fee computed as a percentage of the mortgage loan, usually slightly less than half of one percent of the principal of the mortgage loan. As such, the mortgage servicer primarily faces institutionally-constructed incentives—those given by the firm that allocates the servicing contract. So the mortgage servicer will generally want to do a sufficiently adequate job to retain the contract, while
reducing costs as much as possible. So if we think of the mortgage servicer as merely a role rather than thinking of the particular party that occupies that role, there is little of special interest as far as incentives go.

There is an important complicating factor, however. Often the mortgage servicer is the same financial institution that originated the mortgage, and it has been common for the originator to sell the mortgage, while retaining the servicing rights over the mortgage. This servicing role and the income it represents complicate matters for understanding the mortgage originator’s incentives. When the originator contemplates granting a mortgage, we have seen that the plan to sell the mortgage more or less immediately provides a powerful incentive to compromise its demands for financial capacity on the part of the borrower. At the time of origination, the anticipation of a long stream of mortgage servicing income, coupled with the plan to sell the mortgage, can also provide the originator with a socially-emergent incentive to grant loans it might otherwise den on economic grounds.

The Due-Diligence Firm—When a prospective purchaser of a pool of mortgages evaluates the value of a mortgage in the pool, it often hires a due-diligence firm to review the paperwork and to assess the value of the individual mortgages in the pool. Often the purchaser will be an investment bank that plans to securitize the mortgages in the pool. As such, the bank appears to have clear incentives to secure an honest estimate of the value of the mortgages. Even if the bank merely wishes to sell securities based on the cash flows from the mortgages, it surely wishes never to overpay for the mortgages it purchases.

In retrospect, after a high rate of defaults, many due-diligence firms appear to have reported much too favorably on the quality of the mortgages they were analyzing. At first glance, this appears anomalous as the bank should certainly want to know what the mortgages are really worth. However, it is important to distinguish between the bank as an institution or firm and the employees of the bank who interact with and supervise the due diligence firm. In other words, investment banks may have their own principal-agent problems with incentive incompatibility.

Consider a bank employee charged with evaluating mortgages in a pool who travels to the site of the originator to evaluate mortgages the originator offers for sale. Employees of the due-diligence firm accompany the representative for the investment bank. In the ordinary event, the bank employee received compensation based on the volume of mortgages he acquires for the bank. However, if the mortgages are reported to be of low quality, the bank will refuse to buy them or will offer a price that is too low to secure their purchase. Working under time pressure and rewarded for actually buying mortgages, the bank employee on the scene might be tempted to encourage the due-diligence firm to be charitable in its evaluation.

This is another situation in which there need not be an actual solicitation for a party to ignore its duties. Instead, securing the easy review of the mortgages being examined could be accomplished via a cooperative-game incentive. The representative of the investment bank needs to buy the mortgages; the due-diligence firm needs to work cooperatively with the person from the investment bank; the due-diligence firm must expect the bank employee to report to higher management on the performance of the due-diligence firm; and the two parties are quite likely to have to work together in the future. In this context, it is easy to see that the two parties might implicitly reason as follows: We need to work together to get this job done; all the immediate incentives suggest buying mortgages; the investment bank might overpay a bit, but they are going to sell them to someone else right away in any event; and, the clincher, documentation from the due-diligence firm that the mortgages are of high quality will help the investment bank get a good price for the new CMOs it issues anyway. When we also consider that this line of
specious reasoning was taking place in a real estate boom era, with prices always rising, we can even imagine that someone might think that exaggerating of the quality of mortgages will not really hurt anyone anyway.

The Securitizer—In the originate-to-distribute model, the key role of the securitizer, which is usually an investment bank, is to first acquire mortgages and collect them into a pool. Based on the cash flows from the pool, the securitizer then creates a package of securities with different instruments having diverse cash flow patterns. To make a profit, the investment bank must construct these securities in a way such that the total flow of payments from the mortgages in the purchased pool are adequate to meet the promised payments of the newly created collateralized mortgage obligations (CMOs). If the investment bank succeeds in doing so, the newly created package of securities will have a greater market value than the mortgage pool that actually throws off the foundational cash flows. This is possible, because some investors may prefer securities with particular characteristics, such as having particular maturities, certain credit quality ratings, and special patterns of cash flows. In short, when the investment bank succeeds, the cash flows thrown off by the mortgages that constitute the pool have an increased value when they are re-bundled as new securities.

The securitizer’s incentives are fairly clear and belong to the socially-emergent type at base: buy mortgages as cheaply as possible; take those purchased cash flows in hand and, based on them, construct the set of securities that the market will value most highly; and then sell the new securities at the highest possible price. Simply described in this manner, there is little of interest. However, matters become more consequential when we consider a key step in the construction of the new securities—the interaction of the investment bank with credit-rating agencies.

The Credit-Rating Agency—More than 100 years ago, a few businesses were formed that evolved into today’s credit-rating agencies. At inception, these were essentially research firms and publishers. In their early days, Moody’s and Standard and Poor’s researched securities, mostly railroad bonds, formed an opinion of the creditworthiness of those bonds, published their evaluations, and sold those evaluations to the public. Over time, this publishing model became untenable, and credit-rating agencies moved to an issuer-pays business model—today the issuer of a security pays a credit-rating agency a fee for providing a rating of the security.

The industry has an oligopolic structure, with 90 percent of the industry being comprised of Standard and Poor’s, Moody’s, and Fitch. Part of the reason for the oligopoly stems from the designation by the Securities Exchange Commission of particular firms as nationally-recognized statistical-rating organizations (NRSROs) and the requirement that new publicly traded securities have a rating from such an organization. This privileged role has long been important, basically providing these agencies with a regulatory license. (This requirement of an NRSRO designation is falling away now in the aftermath of the crisis, but it was fully in place until quite recently.)

Firms issuing securities have always sought better ratings among the handful of NRSROs, but when firms were principally issuing simple plain-vanilla bonds, rating agencies were mostly able to maintain their credibility. The NRSROs played a special role during the financial crisis, however. Unlike a plain vanilla corporate debenture with its quite standard features, the investment bank artfully constructs CMOs from a myriad of possibilities. The securitizer needs to construct securities that will appeal to the tastes of the investor, but also needs to manage their creation in a way that results in the best ratings, all things considered, for the CMOs being constructed. If the securitizer wants to create a security that will receive an AA rating, for example, it wants to do so in a way that minimizes the cost of achieving that rating by
putting just enough financial value into the security to obtain the desired rating. Put another way, the securitizer wants just to minimally achieve a desired rating and wants to avoid creating an AA rating that is almost an AAA.

Who could possibly know better what it takes to get a particular rating than a credit-rating agency? Perhaps it was a natural outcome of the incentives in this situation, but securitizers began to hire credit-rating agencies as consultants to advise on the construction of the CMOs they were creating. For a handsome consulting fee the credit-rating agency would help firms devise a security that would achieve the desired rating at the lowest possible cost. Then, in their role as a credit-rater, the credit-rating agency would issue a rating that, not surprisingly, matched the target rating that the credit-rating agency and securitizer worked together to create.

This interaction between securitizer and credit-rating agency, conducted against a background requiring that securities receive a rating by an NRSRO, was beset by a variety of diverse and overlapping incentives. Given the regulatory setting and the valorization on NRSROs, securitizers were highly incentivized or even required to secure a rating. This was clearly an institutionally-constructed incentive insofar as we choose to regard the impetus as a incentive rather than a strict mandate. There was, however, no requirement for securitizers to secure the consulting services of any credit-rating agency. That so many securitizers found it to their advantage to seek guidance from an agency in constructing their CMOs was a response to a set of socially-emergent incentives.

For a credit-rating agency to act both as a consultant in the creation of securities and as a rater of securities involves a clear conflict of interest. An agency could have established a policy of refusing to accept a dual role of consultant and rater. Instead, agencies aggressively responded to the socially-emergent incentives to accept the lucrative role of consultant. Rather than thinking of this as a socially-emergent incentive, one might initially consider it as a institutionally-constructed incentive, because the special role granted to credit-rating agencies was the result of the public policy decision to require new securities to have a rating from an NRSRO. However, the incentive for a securitizer to hire an agency as a consultant was not part of any intended incentive, but was, instead, an unintended consequence of the initial policy, a policy that was put in place before the widespread practice of securitization. Thus, when an institutionally-constructed incentive gives rise to unintended additional or contrary incentives, those are socially-emergent incentives. Of course that is almost the kernel of the unintended consequences of governmental action: A policy is established to provide certain institutionally-constructed incentives, but the unintended consequence of such a policy is very often the instigation of a host of irrelevant or even contrary socially-emergent incentives.

Before NRSROs were designated, and ratings by such agencies became required, the rating published by an agency was only valuable because of the information it presumably contained, not because it was the requirement of a governmental mandate. As such, a reputation for objectivity and fairness was absolutely essential to the business model of a credit-rating firm. During the CMO boom, credit-rating agencies could more freely engage in the conflicted behavior of acting as a consultant and as a rater for a particular security. After all, a diminution of objectivity and credibility in the rating process matters little if the issuer must purchase a rating in any case. Thus, an unintended consequence of requiring a rating from an NRSRO was to provide an agency with a socially-emergent incentive to compromise the value of the ratings they provided by engaging in the obviously conflicted behavior of acting as both consultant rater of a security.
Even though the issuer of a security had to obtain a rating for the security from at least one of the NRSROs, these rating firms competed to a certain degree. As a result, securitizers shopped for the right NRSROs on the basis of price and, more importantly, malleability. Thus credit-rating agencies and securitizers had an important cooperative-game incentive. Working together, they had good reason for the agency to help the securitizer create a security designed to achieve a given rating at the lowest possible cost. The agency might have to hold its metaphorical nose when it then granted the desired rating, but, in the spirit of cooperation, the securitizer had an incentive to agree to higher fees to assuage the delicate feelings of the agency. Thus, working together the securitizer and the agency had a cooperative-game incentive to create securities that were financially quite weak for the rating achieved and for the securitizer to lubricate this transaction by agreeing to higher-than-normal fees for the dual services the credit-rating agency provided.

The Ultimate Investor—At the end of the originate-to-distribute chain of mortgage production stands the ultimate investor—the financial institution that would ultimately buy the newly-created CMO and hold it in a portfolio. Of course, the fundamental socially-emergent incentive of such an investor was to obtain the highest level of return on the portfolio for bearing a given level of risk.

The charter or long-established operating policies of many financial institutions require them to hold a portfolio of a given credit quality as measured by the ratings of the various securities in the portfolio. In some cases, investors were prohibited from even holding securities with too-low a rating. Perhaps not surprisingly, the promised yield on many CMOs was higher than the yield on a plain-vanilla corporate issue with the identical credit rating. Confronted with two AAA rated securities with different yields, economists immediately presume that the greater yield on one security reflects its higher risk, no matter what the rating indicates. The manager of a typical investment portfolio faces pressure to deliver high yield while honoring the investment policy under which she operates. This provides a socially-emergent incentive to the portfolio manager to seek the highest yield for a security with a particular rating. This incentive to “reach for yield” made such portfolio managers the natural customers for, and unwitting victims of, CMOs.

Regulatory Agencies and Officials—The entire originate-to-distribute chain of mortgage production was subject to close regulatory control by a host of federal regulators and agencies such as the Securities Exchange Commission, Federal Reserve Board, Office of the Comptroller of the Currency, Federal Deposit Insurance Corporation, the Department of Housing and Urban Development, and the Federal Reserve Bank of New York. At least on paper, these regulatory bodies were empowered to fully control all aspects of the industry. The ensuing financial crisis demonstrated that these agencies collectively failed to exercise their powers in a manner that behooved the public, and this was due in no small part to the incentives that regulatory agencies and their employees faced.

The problem of regulatory capture, in which the presumed regulator becomes an advocate for the industry that it should be regulating, has long been familiar, and the unintended consequences of regulation and public policy has long been a staple of much economic literature, particularly in the field of public choice. The literature on this topic is vast, and the role of regulators in causing the financial crisis is itself so pervasive that it is impossible to treat this topic in a brief compass. However, there are two aspects of national policy that deserve special mention because of their role in providing destructive incentives, the Community Reinvestment Act of 1977 and the National Homeownership Strategy instituted in the 1990s.
The Community Reinvestment Act (CRA) of 1977 was intended to deter the policy of “redlining” in which financial institutions would simply refuse to lend under any terms to certain geographical areas, which were at least metaphorically indicated by a red line drawn on a map to show the excluded territory. The law had limited impact initially but received new enforcement impetus in the 1990s after a report by the Federal Reserve Bank of Boston alleged widespread (at least) de facto discrimination. This report has remained controversial, and its methodology and conclusions have been widely attacked.29 Similarly, the Act remains controversial and the understanding of its impact has been quite politicized. For example, Paul Krugman attacked economists at the University of Chicago for alleging that federal action eroded lending discipline in an effort stimulate mortgage lending to low income individuals and to expand home ownership, concluding: “The Community Reinvestment Act of 1977 was irrelevant to the subprime boom, which was overwhelmingly driven by loan originators not subject to the Act.”30

One of the most recent studies of the CRA poses the key question in its title, “Did the Community Reinvestment Act (CRA) Lead to Risky Lending?” and answers the question in forceful terms: “Yes it did….The effects are strongest during the time period when the market for private securitization was booming [2004-2006].”31 Of course, the enduring question of the Act’s ultimate effects will not to be settled here, but it strains credulity to allege that a law that was so vigorously defended and actively enforced had no effect on the expansion of credit and the increase in home ownership that was at the heart of the subprime boom.32

Related to the CRA was the National Homeownership Strategy initiated in 1993 and centered in the Department of Housing and Urban Development, which wrote in 1995: “At the request of President Clinton, the U.S. Department of Housing and Urban Development (HUD) is working with dozens of national leaders in government and the housing industry to implement a National Homeownership Strategy, an unprecedented public-private partnership to increase homeownership to a record-high level over the next six years.”33

My understanding of the effect of these two efforts is that they did matter to home lending, that they did provide institutionally-constructed incentives for financial institutions to reduce their credit requirements, and did encourage lenders to make home mortgage loans that they otherwise would not have made. In particular the CRA and the pressures of the National Homeownership Strategy gave institutionally-constructed incentives to financial institutions to relax credit standards to minorities. These relaxed standards were then extended to all applicants, as they must have been by law in order to escape charges of discrimination. As a result, financial institutions granted mortgages that they should never have made because the borrowers were too financially weak to service the loans. Of course, the laws did not create institutionally-constructed incentives to make bad loans, so described. But they did provide socially-emergent incentives to make loans that proved to be quite bad.

But there is more to the story than this. Absent the effect of the CRA and the National Homeownership Strategy, some lending institutions were already poised to aggressively relax credit standards and to expand dubious mortgage lending. The potential profits of originating loans and being able to sell off the loans with their attendant risks almost immediately already created socially-emergent incentives to make risky loans absent any stimulation from the government. However, the CRA and the National Homeownership Strategy contributed to a strengthening of the already extant incentives for reckless lending.

As a concluding speculation, and one I believe to match reality, it is reasonable also to see the proceedings as an example of cooperative-game incentives between the federal authorities that wished to see expanded lending and financial institutions ready to reap the profits
of making more loans. In other words, I argue that the federal agencies urged lenders to relax credit standards while publicly denying any such encouragement. For their part, some financial institutions were all too happy to make bad loans while pretending to uphold rigorous credit standards.

IV. Conclusion
This paper has studied the nature of incentives as they are understood in economics and as they function in our contemporary economy. Incentives dominate our comprehension of the springs of human action, but often we speak of incentives as if there is only one kind and as if the word “incentive” is univocal, when in reality there are many kinds of incentives and the word has many meanings and uses.

The study uses the financial crisis of 2007-2012 as a laboratory for examining the variety of incentives and distinguishes five key types of incentives. First, are natural incentives in which purely non-human conditions provide incentives to act in certain ways. Second, “strictly-speaking” incentives arise when one party makes a specific conditional offer of something of value in order to elicit a particular behavior. Third, socially-emergent incentives arise out of the interplay of human elements to create conditions that make certain behaviors attractive, but that do so without anyone intentionally creating those incentives. Fourth, governmental and other human institutions intentionally create institutionally-constructed incentives to induce particular behaviors, and these incentives are often accompanied by a host of unintended consequences. That is, the institutionally-constructed incentives to do one thing also constitute socially-emergent incentives to do other things that are completely unintended. Fifth, and finally, cooperative-game incentives are a type of socially-emergent incentive. These incentives give two or more parties incentives to pursue a particular course of action while, often, denying that the behavior is related to the incentives that they confront.

Many have regarded the financial crisis as being the product of a “perfect storm” of related causes and events. I believe that a clockwork metaphor is more appropriate. In large part, the financial crisis was the result of many incentives operating together. As we have seen, ten parties in the originate-to-distribute chain had their own particular incentives. These incentives fit together like the springs and wheels of a clock to make a machine of financial destruction. Unlike a clock devised by a human, the clockwork of incentives that drove the financial crisis had no designer, but arose organically from a variety of incentives that fit together in the most amazing way and led to an economic ruin that was anticipated by very few.
Figure 1
The Originate-to-Distribute Model of Mortgage Production

References


Notes

1 William James, *The Varieties of Religious Experience: A Study in Human Nature. Being the Clifford Lectures on Natural Religion Delivered at Edinburgh in 1901-1902*, London: Longmans, Green, & Co., 1902. An etext of this work is available at: [http://www2.hn.psu.edu/faculty/jmanis/wjames.htm](http://www2.hn.psu.edu/faculty/jmanis/wjames.htm). In that text, the cited passage about fear appears on p. 295. The context is: “The hopelessness of Christian theology in respect of the flesh and the natural man generally has, in systematizing fear, made of it one tremendous incentive to self-mortification.” The title of this paper is, of course, a homage to James’s classic work.


4 Ernst Fehr and Armin Falk criticize the treatment of incentives in economics as having an inappropriate emphasis on monetary incentives and diminishing the importance of the desire to reciprocate, achieve social approval and to secure intrinsic enjoyment for work. By contrast, this paper focuses on a tendency of economics to emphasize a too-narrow conception of incentives.


15 Ruth W. Grant, “The Ethics of Incentives: Historical Origins and Contemporary Understandings,” Economics and Philosophy, 2002, 18, 111-139. See p. 120.


22 See Robert Nozick, Anarchy, State, and Utopia, New York, Basic Books, 1974, particularly the discussion that begins on p. 263.


I base this claim on a small sample drawn from my personal observation. I have seen an appraisal returned with a value exactly equal to a contract price of $710,000 and another appraisal that exactly matched a contract price of $695,800.


