BEYOND THE REGULATION DEBATE: ANALYZING ASSUMPTIONS, INCENTIVES, AND THE RELATIONSHIP BETWEEN STAKEHOLDERS IN THE MORTGAGE CRISIS

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ABSTRACT

This paper analyzes the decision-making processes of six stakeholders involved in the mortgage crisis. The following stakeholders were selected: homebuyers, loan officers, loan originators, investment institutions, rating agencies, and investors. This paper identifies incentives among these stakeholders to assess their decision-making processes, demonstrating rewards for individualistic behavior. The general outlook on risk management is profiled by examining the comprehension and communication of information and subsequent risk. Information asymmetries are explained through the stakeholders' shared trust and universal assumptions concerning the soundness of the markets. A survey of economists documents their opinions on how risk was understood, investigated, and communicated; levels of trust and influence between and within the stakeholders; and general assumptions and incentives in these markets. The results of this survey are discussed with attention to correlations between information asymmetry and trust.

INTRODUCTION

Experiencing the effects of the burst housing bubble and credit crunch, regulators, stakeholders, and consumers alike have scrambled to find a single cause for the financial crisis. Specifically, stakeholders involved in the creation and securitization of subprime mortgages have been indicated as primary culprits. Charles Calomiris, a researcher for the National Bureau of Economic Research summarizes the problem, "The current global financial crisis grew out of banking losses in the United States related to subprime lending" [1].

There were clear instances where the risks of subprime mortgages and securitization went unnoticed or ignored. Due to low interest rates and Congressional support for equitable housing, the period from the mid-1990s to the middle of this decade was characterized by a growth in housing, and subsequently mortgage lending. Spurred by high demand, mortgage companies and commercial banks issued mortgages with high risks of defaulting, and the scope of the problem was both broadened and magnified when the mortgages were resold to investment institutions. Investment institutions securitized mortgages and rating agencies favorably rated many mortgage-backed securities. Allured by higher yields and "safe" ratings, investors worldwide bought these investment options. Along the supply-demand chain that converted homebuyer's mortgages into highly demanded investments, the stakeholders were making substantial short-term gains and transferring the long-term risk onto the final holders of the securities, the investors.

Unfortunately, it is impossible to micromanage the actions of millions of homebuyers, loan officers, investment bankers, ratings employees, and investors. Instead of assigning blame to certain stakeholders, the premise of this research is to understand why so many individuals made poor decisions. This research is based on the notion that in order to properly assess and address the failures of the mortgage crisis, one must investigate the actions and behaviors of the stakeholders.

ASSESSING THE DECISION-MAKING PROCESSES OF THE STAKEHOLDERS

Incentives

In order to understand the flaw in the housing and financial markets, it is essential to understand why so many individuals made poor decisions. Thomas Sowell assumes a broad perspective on evaluating the causes of the financial crisis: "Any realistic assessment of the decision-making process in the market or in government must examine the incentives and constraints facing those who operate in these two venues" [2]. In accordance with this assertion, this section will examine the incentives acting upon six of the primary stakeholders in the mortgage and financial markets: the homebuyers, the loan officers, the loan originators, the investment institutions, the rating agencies, and the investors.

Increased Homeownership

The belief that subprime mortgages would aid equitable housing was widely asserted. In a testimony before the House of Representative's Committee on Financial Services, Federal Reserve Board Director Sandra Braunstein concludes, "The expanded access to subprime mortgage credit has helped fuel growth in homeownership" [3]. While interviewed for the CNBC special House of Cards, Alan Greenspan remarked on one of the reasons that many were excited about the burgeoning subprime market: "…It looked as though we were dealing with a major increase in home ownership, which is an unquestioned value to society" [4]. Mr. Greenspan's and Ms. Braunstein's statements were supported by data collected by the U.S. Department of Commerce's 2007 Census report; from 1981 to 1994, the homeownership rate remained consistently at 64%, but by 2004 had increased to 69% [5].

As such a universally accepted social good, homeownership served as an incentive for several groups. Clearly, individual citizens benefited from homeownership, and because of this, companies involved in the creation and financing of homes were able to validate their practices by arguing that they were promoting increased homeownership. For example, loan originators could justify issuing more subprime mortgages because they were seen as facilitators of equitable housing. In an article for the Heritage Foundation, senior research fellow Ronald Utt remarks, "Although subprime and other risky mortgages were relatively rare before the mid-1990s, their use increased dramatically during the subsequent decade" [6]. However, the question is whether these companies were truly interested in promoting social goods, or if their decisions were encouraged by another key incentive: profit.

Profit

Joseph Stiglitz is an economist who won the 2001 Nobel Prize for his work on information asymmetries, a field which will be discussed in this paper. In a testimony before the House of Representative's Financial Services Committee, Stiglitz makes a key generalization concerning incentives to the stakeholders of the financial market:

> Markets only work well when private rewards are aligned with social returns…In spite of their failure to perform their key social functions, financial markets have garnered for themselves in the US and some of the other advanced industrial countries 30% or more of corporate profits—not to mention the huge compensation received by their executives [7].

In the home loan and financial markets, the fact that profit would serve as an incentive is not surprising. A basic precept in macroeconomics is that in a free market, producers and consumers act rationally to pursue their own greatest personal utility. Financial prosperity allows for further investment and further growth, so profits and wealth can be labeled as types of personal utility for stakeholders.

In the mortgage industry, homebuyers, loan officers, and loan originators all had a financial stake in the creation and execution of mortgage agreements. As homes increasingly served as investments, homebuyers profited in the short run by being able to buy and sell homes more quickly. In describing loan officers, the Bureau of Labor statistics states that "most are paid a commission based on the number of loans they originate", so loan officers had an incentive to sell as many loans as possible [8]. In addition, due to the demand for mortgages from investment institutions, loan originators could resell their mortgages and earn a profit, so their personal utility depended on the number of mortgages they could sell.

The high demand for financial products also prompted investment institutions and rating agencies to take advantage of profitable opportunities. In his book *Financial Shock*, Economist Mark Zandi reports, "Wall Street's securitization machine went into overdrive during the housing boom, producing frenzy in the mortgage securities market. At its peak in 2005, more than $1.1 trillion in [residential mortgage-backed securities] were issued and sold to investors" [9, p.116].

High-Yield Investment Opportunities

Residential mortgage-backed securities were highly demanded because they were lauded as safe due to the process of securitization. Securitization was believed to diversify the risk of subprime mortgages, and investor fears were assuaged by the claims of rating agencies and federal regulators alike. In a publication for the Financial Policy Forum, research assistant Ivo Kolev summarizes the allure of MBSs:

> From investors' point of view, the MBS securitization process converted non-rated, illiquid loans into securities that are highly liquid, have low credit risk and offer competitive rates of return…MBSs offer higher yield than Treasury notes and corporate bonds. This higher yield compensates partially for the higher credit risk, market risk and especially the embedded prepayment option [10].

Essentially, the public perception was that these investment options offered greater returns than other low-risk bonds; this combination of higher yield and lower risk made residential mortgage-backed securities desirable.

Incentives: Demonstrating Individualistic Behavior

Due to the incentives of increased homeownership, profitable opportunities, and high-yield investment opportunities, it appeared that each of the stakeholders benefited from the process that generated and securitized subprime mortgages. In the housing market, homebuyers were able to buy houses both as primary residences as well as lucrative investments, loan officers earned sizeable commissions from the booming lending industry, and loan originators were able to reap profits by either holding onto the mortgages or reselling them to eager investment institutions. On Wall-Street, mortgage-backed securities were an easy sell to enterprising investors, and investment institutions and rating agencies both profited from the active market.

ASSESSING THE RISK MANAGEMENT POLICIES OF THE STAKEHOLDERS

Information Control

During the housing and financial boom, each stakeholder acted in ways that bolstered financial growth. One of the ways that these stakeholders were able to net profits was through the control of information. Joseph Stiglitz highlights the implications of such behavior: "The success of a market economy requires not just good incentive systems but good information —transparency…But there are often incentives,

especially in managerial capitalism (where there is a separation of ownership and control), for a lack of transparency" [11].

Due to the incentive to make profits in the lending market, homebuyers, loan officers, and loan originators all benefited from lowering barriers to issuing mortgage loans. As such, they had a vested interest in how mortgage agreements were arranged. Because there were a limited number of consumers that needed to take out mortgage loans, loan officers and originators had incentives to solicit as many potential borrowers as possible, regardless of creditworthiness. Under the existing system of assessing creditworthiness, oftentimes the only way to legitimize issuing credit to subprime borrowers was to either alter or omit aspects of their personal information. As the risk of the mortgage loans was transferred from homebuyers to lenders, less was known about the nature of these individual mortgages. In addition, information control spanned the financial market. For example, investment institutions have been accused of not making their securities easy for the buyers to understand. In an interview with the *Financial Times*, Stiglitz comments:

> "One of the problems with subprime mortgages is…the lack of transparency, as they've hidden these products into complex products where they slice and dice the risk… It wasn't clear in the process of slicing and dicing and reassembling that they were actually adding much tailoring to the different risk needs of different groups" [12].

As a result, assuming these stakeholders to be rational, many must have believed that they would benefit by controlling information.

Negative Implications of Information Asymmetry

Market failure

However, instead of benefiting from the control of information, the lack of "perfect" information had a detrimental effect upon the livelihoods of many of the stakeholders. Information asymmetry describes situations in which one party in a transaction has more information than the other party or parties, which is created when one or more stakeholders control information. In a speech to the Institute of International Bankers, Federal Reserve Governor Randall Kroszner explains how information asymmetry can pose a major threat to the efficiency of markets:

> "A core principle of economics is that markets are…more efficient, when accurate information is available to both buyers and sellers. But for markets to work best, market participants must utilize available information…In the case of new and innovative products, there might be a particularly strong demand for information. Then this information must be processed appropriately before decisions are made about whether to buy or sell" [13].

Information asymmetry was a hindrance to effective risk management policies because with a lack of information, stakeholders were unable to appropriately assess the risk of the mortgages and subsequent securities. On a larger scale, without appropriate information, stakeholders could not make informed decisions when interacting with each other, entailing a substantial market failure.

Ethical Failure

Information asymmetry represents more than a market failure; there are also ethical implications to not promoting "perfect" information. Rushworth Kidder, the founder of the Institute for Global Ethics, asserts that there was a lack of information disclosed by investment banks when marketing their mortgage-backed securities and financial instruments to investors. In his book *The Ethics Recession*

Kidder states, “truthfulness, it would seem, requires full disclosure of risk and an honest desire for clarification, which Acuff [a financial expert Kidder interviewed] finds missing here” [14, p.13].

In addition, Kidder addresses the instances where home buyers would exaggerate their personal information in order to finance their new homes. He acknowledges the reasoning behind these “little white lies”: “As a culture, we’ve long winked at little white lies on the grounds that they’re victimless crimes, isolated and harmless” [15, p.17]. However, Kidder points to this collective deception as a contributor to disastrous decision-making: “…when little white lies grow gray and concentrated, they turn black as a cloud of locusts, making us all victims as they devour everything in their path” [16, p.17-18].

There is a reason why ethicists would assume a stance in this debate. A pillar in the ethics of consumer marketing is the contract view of business’s duties to consumers. Manuel Velasquez, a professor of Business Ethics at Santa Clara University, outlines the contract view in his text, *Business Ethics: Concepts and Cases*: “…the relationship between a business firm and its customers is essentially a contractual relationship, and the firm’s moral duties to the customer are those created by this contractual relationship” [17]. He notes that according to traditional moralists, the key moral duties involved in a contractual relationship all depend on the free sharing of information. Specifically,

1. “Both of the parties to the contract must have full knowledge of the nature of the agreement they are entering.
2. Neither party to a contract must intentionally misrepresent the facts of the contractual situation to the other party” [18].

The first moral duty gives credence to Dr. Kidder’s argument that the seller is responsible for effectively disclosing necessary information to the buyer. In addition, Kidder’s assertion about the detrimental effects of “little white lies” on the part of many borrowers is supported by the second moral duty. From this, it can be claimed that the stakeholders who distorted the flow of information during the boom market violated certain ethical duties. Nonetheless, despite making markets less efficient, and violating the due contract theory, information asymmetries were not widely acknowledged. This was partially due to the level of trust in the system and shared between the stakeholders.

Level of Trust

It is clear that anything that hindered the sale of loans or securities would have acted as constraints to these stakeholders. Overlooking the basic regulatory systems put in place, it is probable that the level of trust between the stakeholders could have served as a constraint to business. If the stakeholders had assumed more responsibility for their actions rather than relying upon each other for information and risk management, the subprime mortgage and securitization industries may not have run rampant. Instead, because the housing and financial boom yielded rewards for each of the stakeholders, fewer stakeholders were paying attention to the ethics behind these decisions. Trust was convenient for those who preferred to ask “how much” and “when”, rather than “what” and “why”.

In his publication *The Ethics Recession*, Kidder illuminates the foundations of trust between organizations: “In two centuries, we’ve managed to create an astonishing standard: a broadly shared expectation that most people will do the right thing”. Noting this expectation for morality that has pervaded Western democracy, Kidder asks a series of key questions: “Can democracy and free enterprise survive without deliberate, conscious attention to their moral compasses? If those principles decay – or, worse still, go untaught and undefended – must these institutions collapse?” [19, p. 37]

Zandi aptly summarizes the role of trust in the financial system: “At every point in the financial system, there was a belief that someone—*someone else*—would catch mistakes and preserve the integrity of the process…As the process went badly awry, everybody assumed someone else was in control. No one

was" [20, p.3]. As described before, a lack of adequate information may have caused stakeholders to invest inappropriate levels of trust in each other.

MODEL

This research has been designed to explore beyond the argument that regulatory failures are responsible for the decisions and subsequent market failures that lead to the mortgage and financial crises. The model for this research is derived from the literature review above; it explores several variables to cover the complexities of the stakeholders' behavior. The next few pages include a description and illustration of this model.

The left column establishes a hypothetical model for what variables could have constrained the mortgage-securitization process. First, in regards to decision-making, appropriate regulatory pressure should have neutralized inappropriate competitive pressures and distorted incentives, ensuring that private rewards aligned with social returns. Also, in this ideal model, effective risk management would have been attainable if there had been better information sharing between the stakeholders. In addition, a more prudent investment of trust between stakeholders and in the system may have squashed several fatal assumptions. As such, stakeholders may have prepared themselves better for risks like falling housing prices, rising interest rates, insufficient regulation, and failures in securitization.

The right column summarizes the variables that could have initiated the market failures that characterized the financial crisis. First, a lack of appropriate regulatory pressure entailed that there was no external force that balanced competitive pressures or distorted incentive systems. Due to this, the decision-making processes of the stakeholders were altered, and the needs of society were not met through the actions of the stakeholders. Similarly, information asymmetry and inappropriate trust sharing lead to improper risk management practices because stakeholders assumed less responsibility for their actions. Finally, due to trust in the overall "system" of converting mortgages to MBSs, many stakeholders assumed that housing prices would continuously rise, interest rates would stay low, regulation was sufficient, and securitization diversified any risks inherent in the subprime mortgages.

What Should have Constrained the Mortgage-Securitization Process	What Facilitated the Mortgage-Securitization Process
Foundation for Decision-Making	***Foundation for Decision-Making***
Appropriate Regulatory Pressure: = **Balanced pressure** between stakeholders and within stakeholders	Lack of Appropriate Regulatory Pressure: = **High pressure** between stakeholders and within stakeholders
Reasonable Incentives: Private rewards = social returns	**Distorted Incentives**: Private rewards are believed to equal social returns, but they do not
Foundation for Risk Management	***Foundation for Risk Management***
"Perfect" Information: Properly assessing, investigating, and communicating risk	**Information Asymmetry:** Improperly assessing, investigating, and communicating risk
Appropriate Level of Trust between stakeholders and in the system • Between stakeholders • In the "system"	**Inappropriate Level of Trust** between stakeholders and in the system • Between stakeholders • In the "system"
No Assumptions: Contingencies **for:** • Falling housing prices • Rising interest rates • Insufficient regulation • Risks of securitization	**Assumptions:** Lack of Contingencies for: • Falling housing prices • Rising interest rates • Insufficient regulation • Risks of securitization

METHOD

From this model, several key variables emerge. The foundations for decision-making are comprised by the pressures exerted between and within stakeholders, as well as the incentives for each stakeholder. Information control, levels of trust, and assumptions all play a role in the foundations for risk management. In order to see if these variables truly played a role in the financial crisis, it was preferable to acquire as many perspectives as possible concerning the relationship between these stakeholders.

Surveying Economists and Researchers

Due to its historic effect on economies worldwide, the housing boom and subsequent financial crisis have been dissected and discussed by economists and researchers. There are several advantages to surveying economists and researchers instead of the stakeholders themselves. First, working for universities, the federal government, or independent research institutions, these individuals have devoted their time studying the larger implications of the stakeholders' actions. Also, because many do not work for the companies themselves, they may be less fettered by corporate allegiances or personal bias. In addition, within the academic world, it is much easier to locate economists and researchers with varying opinions because economic theory itself is so broad.

Survey Sample: The Virginia Association of Economists

For these reasons, this research centers upon the perceptions of economists and researchers instead of directly focusing on the individual stakeholders. A web-based survey was distributed to 398 members of the Virginia Association of Economists. On its webpage, the VAE describes its objective as "to promote inquiry into economics, to improve economic education, and to develop understanding of the operations of the Virginia economy" [21]. It also describes its members as "individuals who have an interest in theoretical or applied economics, economic education, or the Virginia economy" [22]. Members are also either residents of or employed by the Commonwealth of Virginia.

VAE members were first contacted by postcards, where they were asked to follow a link to participate in the web-based survey. A week after the postcards were mailed, 226 additional emails were sent, reminding participants to take the survey. After having been contacted, 38 useable surveys were collected, so the response rate was about 9.5%. After an initial informed consent section and an introductory page defining the surveys' terms, the survey had six pages of questions. The questions themselves were a combination of multiple-choice and open-ended text fields. The survey was designed to take 5 to 15 minutes to complete.

Survey Purpose and Design

The purpose of the survey was to solicit well-informed opinions from a variety of economists and researchers, and to glean a better understanding of what individuals believe occurred during the mortgage crisis. This feedback would help to determine the applicability of the variables previously listed. Each section of the survey focused on a variable outlined in the model and gathered the participants' opinions on its importance. For further reference, a copy of the survey may be found in the appendix copied to the back of this paper.

Section 1: Assessing Information Sharing between the Stakeholders

The first set of question assessed the economists' and researchers' opinions on how much information was shared between the stakeholders. The participants were provided with a scale (Not at all, Barely, Somewhat, Mostly, and Completely), and were asked to first rate how each stakeholder understood the risk of the mortgages and securities these stakeholders were working with. The rest of this section followed a similar format, using the same scale to glean each participant's opinion on how the stakeholders investigated this risk, and finally how each stakeholder communicated the risk of the mortgages and securities to the next stakeholder. The purpose of this section was to solicit the participants' opinion on which stakeholders possessed better information, which pursued better information, and which communicated better information. These three variables had been selected to glean a better understanding of the nature of information asymmetry in these markets.

Section 2: Assessing Trust Sharing between the Stakeholders

The second section asked each participant's opinion on the significance of information sharing between the stakeholders. These questions prompted participants to rate how much they believed each stakeholder relied upon the information provided to them by the stakeholders they interacted with. The scale used before (Not at all, Barely, Somewhat, Mostly, and Completely), is repeated here. Whereas the first section dealt with how much initiative each stakeholder took in order to obtain and communicate information, this section pertained to how much each stakeholder trusted the other's information and how that impacted their own decisions. The format of this section was based on the generalization that information was shared only down the chain of stakeholders. Specifically, homebuyers only shared information with loan officers, loan officers with lending institutions, lending institutions with investment institutions, investment institutions with rating agencies, and rating agencies with investors. Because of this, each of the statements only applied to two stakeholders at a time.

Section 3: Assessing Pressures between and within the Stakeholders

The third section was designed to also measure how each stakeholder is believed to have influenced each other. However, this section gleaned the participants' opinions on the pressure each stakeholder exerted on one another to accomplish their own goals. As explained earlier, each of the stakeholders' livelihoods depended on the actions of other stakeholders. As such, it is likely that each stakeholder exerted pressure on each other to have their demands met. In addition, due to the high levels of competition in these markets, participants within the same stakeholder group also influenced each other. As a result, this section separately investigated pressures between and within the stakeholders.

In both of these parts, participants were provided with a series of statements applied to each of the stakeholders. In the first section, each of the statements was phrased in this way: "[one stakeholder] was influenced by [the other stakeholder] to [meet the influencing stakeholder's demand]". Similarly, the second section contained statements like "[one stakeholder] was influenced by [its peers] to [engage in competition]". For each of the statements, the participants were asked to rate how much they disagreed or agreed (Completely Disagree, Mostly Disagree, Neutral, Mostly Agree, or Completely Agree).

Section 4: Assessing Assumptions among the Stakeholders

The rest of the survey provided each participant the opportunity to include their own feedback in their responses. This section specifically tested what assumptions the participants believe drove the actions of each stakeholder. Each question dealt with an individual stakeholder, and provided a list of assumptions based on existing literature. Participants could select as many or as few of the assumptions that they believed were applicable to each stakeholder. For example, the assumptions provided for homebuyers were "consistently rising housing prices", "consistently low interest rates", "sufficient regulation", and

that “lenders would issue appropriate loans”. In addition, each question included a text field where participants could detail any additional key assumptions. This section was designed to analyze the stakeholders’ understanding and trust of their own markets.

Section 5: Assessing Incentives among the Stakeholders

Similar to the last section, this section solicited the participants’ feedback to determine which incentives determined the decision-making of the stakeholders. Although several of the incentives overlapped between stakeholders, each question applied to a particular stakeholder. Once again, even though the questions provided a list of incentives, participants were able to enter personalized responses. By selecting which incentives they believed shaped the decisions of these stakeholders, participants helped to profile the individualistic behavior of these stakeholders.

Section 6: Opinions on Risk Management Policies among the Stakeholders

The final section was a series of five open-ended questions that gave participants the freedom to provide their opinions outside the constraints of rating scales or multiple-choice answers. Each of the questions was designed to encourage the participants to share their varied opinions on information sharing, assumptions, risk management, and preventative measures in the future:

1. Do you believe that the stakeholders exchanged the appropriate amount of information as the mortgages were created, securitized, and sold as investments?
2. Do you believe that the assumption that housing prices would continue to rise was a reasonable one? If so, why do you believe individuals allowed it to govern their actions?
3. Do you believe that any of the stakeholders magnified the inherent risk from these mortgages through their actions? If so, which stakeholders, and how?
4. Do you believe that each stakeholder was aware of the risk involved in their actions? If so, how do you believe they justified their actions?
5. Do you have any suggestions for risk management policies that could prevent a similar situation from occurring in the future?

Participants were encouraged to write extended responses; this section served to cover whatever variables related to the stakeholders’ decision-making and risk management policies that were not addressed by the previous five sections.

RESULTS/ANALYSIS

In order to make the survey questions as clear as possible, each section of the survey had its own format in regards to types of questions and responses. Because of this, it was impossible to use the same method in analyzing the survey data. For example, the first three sections all employed rating scales to record the participants’ opinions. Each rating was assigned its own numerical value, so it was easy use statistical analysis on the results. However, because the fourth and fifth sections also included text fields, it was essential to go farther than analyzing means and values. Finally, the last section was entirely text-based, so interpreting these results required a comprehensive review of each response.

Data Analysis

Results for Information Sharing between the Stakeholders

There are several questions that may be answered by examining the results of the first section. First, by calculating the means of the participants’ responses, it demonstrates how much the participants believed

each stakeholder understood, investigated, and communicated the risk of the mortgage loans and securities. Higher mean values entail that the participants believed the stakeholder to engage in better information sharing. The highest mean values are shaded in dark gray; the lowest mean values are indicated by light gray shading.

Understanding Risk		
Stakeholder	N	Mean
Homebuyers	39	2.74
Loan Officers	38	3.55
Lenders	38	3.71
Investment Institutions	38	3.63
Rating Agencies	38	3.37
Investors	37	2.81

Investigating Risk		
Stakeholder	N	Mean
Homebuyers	38	2.34
Loan Officers	37	2.92
Lenders	38	3.13
Investment Institutions	38	3.24
Rating Agencies	37	2.97
Investors	37	2.65

When the responses were averaged for each stakeholder, the participants believed that homebuyers and investors understood risk the least, and that lenders understood risk the most. The results were only slightly different for investigating risk; according to the participants, homebuyers and investors investigated risk the least, and investment institutions investigated risk the most.

Communicating Risk		
Stakeholder	N	Mean
Homebuyers	36	2.25
Loan Officers	37	2.27
Lenders	37	2.46
Investment Institutions	36	2.39
Rating Agencies	37	2.38
Investors	36	2.22

And finally, the results for the stakeholders' communication of risk mirrored their perceptions of each stakeholder's understanding of the risk. Once again, the participants believed that homebuyers and investors communicated risk the least, and lenders communicated risk the most.

Analysis of Information Sharing between the Stakeholders

There are a few unsurprising trends in this data. First, the different averages between the stakeholders for Understanding Risk implied that many participants believed that there were information asymmetries. If participants rated one stakeholder higher than another in understanding risk, that implies that that one stakeholder possessed more or better information than the other. Also, the fact that homebuyers and investors were rated lower on information sharing than the other stakeholders can be explained by their status as individual consumers. Because homebuyers and investors were the only stakeholders not affiliated with companies, the participants may have believed that these stakeholders had fewer legal or ethical obligations to effective information sharing. As such, in all cases of understanding, investigating, and communicating risk homebuyers and investors were the weak links in information sharing.

Nonetheless, there are things to note in these results. For each of the stakeholders, the means for Understanding Risk were highest, the means for Investigating Risk were lower, and the means for Communicating Risk were the lowest. This implies that the participants believed that stakeholders consciously communicated less information than they fully understood or investigated. And another

trend in the data may demonstrate the effect of such information control. As information was shared from homebuyers to loan officers to lenders, the average rating for Understanding Risk increased. However, as soon as information was transferred from lenders to investment institutions, the average rating fell. This trend continued to investors, where perceived levels of information sharing were low, similar to that of homebuyers. Interestingly enough, this trend was largely mirrored in Investigating Risk and Communicating Risk.

These ratings entail that as the risk of these mortgages was transferred between stakeholders in the residential mortgage market, the stakeholders understood, investigated, and communicated information better. However, once the mortgages were securitized, rated, and resold in the financial market, stakeholders understood, investigated, and communicated information worse. This may insinuate that the participants perceived greater failings in risk management in the financial market than in the residential mortgage market.

Results for Assessing Trust Sharing between the Stakeholders

Calculating the mean of each question also reveals the general perspective on the stakeholders' trust of one another. The table below illustrates the averages for each questions' responses. The highest means are indicated by the dark gray shading, and the lowest mean is shaded in light gray. Once again, the higher the mean, the more the participants believed that the stakeholder relied upon the stakeholder it shared information with.

Question	Mean
How much do you believe homebuyers relied upon loan officers to sell them responsible mortgages?	3.97
How much do you believe loan officers relied upon homebuyers to provide complete information about their creditworthiness?	2.94
How much do you believe lenders relied upon the reports of the loan officers to assess the risk of their mortgages?	3.35
How much do you believe investment institutions relied upon the reports of the lenders to assess the risk of their mortgages?	3.19
How much do you believe rating agencies relied upon the reports of the investment institutions to assess the risk of the mortgage-backed securities?	3.51
How much do you believe investors relied upon the reports of the rating agencies to assess the risk of mortgage-backed securities?	4.00

As demonstrated by the table, the participants rated that homebuyers and investors relied the most upon their partner stakeholders. However, the participants label loan officers as the stakeholder that relied the least upon the stakeholder it interacted with, homebuyers.

Analysis of Trust Sharing between the Stakeholders

As with before, this section had both predictable and unpredictable results. First, because homebuyers were rated among the lowest in understanding risk, it is clear why loan officers would be rated the least in trusting homebuyers. Loan officers possessed better information about the general risk of mortgages, so they would be less inclined to depend on homebuyers' information. The fact that loan officers are rated to trust the homebuyers' information the least entails that the participants not only saw major instances of information control, but that the loan officers were aware of it themselves.

Trusting Stakeholder	IR Mean	Trust Mean	Trustee Stakeholder
Homebuyers	(Low) 2.34	(High) 3.97	Loan Officers
Loan Officers	2.92	(Low) 2.94	Homebuyers
Lenders	3.13	3.35	Loan Officers
Investment Institutions	(High) 3.24	(Low) 3.19	Lenders
Rating Agencies	2.97	3.51	Investment Institutions
Investors	(Low) 2.65	(High) 4.00	Rating Agencies

In addition, with the exception of the loan officers, the rating for Investigating Risk is inversely proportional to their rating for trust sharing. This relationship is highlighted by the dark gray shading of the highest means and the light gray shading of the lowest means. The stakeholders that investigated risk the most relied the least upon the reports of their partner stakeholders, and vice versa. According to these ratings, how much stakeholders depended on information provided to them could have determined how much they investigated risk. This would support the assertion that the more the stakeholders trusted one another, the less effort they put into investigating the risk of the mortgage loans and securities.

Results for Pressures between and within the Stakeholders

As described before, this section served to profile the pressures exerted on stakeholders that may have affected their decision-making processes. This was accomplished by asking the participants to rate how much they disagreed or agreed with each of the following statements. The higher the mean value was, the more the participants on average agreed with each statement (on a scale from 1-5). The majority of responses fell in the "Mostly Agree" category, entailing that the participants perceived influences between and within the stakeholders to be common.

Pressures between Stakeholders	Mean
Homebuyers were influenced by loan officers to agree to mortgage loans.	3.73
Loan officers were influenced by lenders to increase the number of mortgage loans they sold.	4.16
Lenders were influenced by investment institutions to resell more mortgage loans.	4.14
Investment institutions were influenced by investors to meet increasing demand for securities.	4.00
Rating agencies were influenced by investment institutions to rate securities so that they could be easily resold.	3.78

Pressures within Stakeholders	Mean
Homebuyers were influenced by other homebuyers to be involved in favorable mortgages.	3.57
Loan officers were influenced by each other to remain competitive with other loan officers.	4.05
Lenders were influenced by each other to remain competitive with other lenders.	4.14
Investment institutions were influenced by each other to remain competitive with other investment institutions.	4.16
Rating agencies were influenced by each other to remain competitive with other rating agencies.	4.00
Investors were influenced by each other to be involved in large investment returns.	4.08

From the participants' perspective, loan officers experienced the most inter-stakeholder influence at the hands of lenders. Conversely, the ratings denote that homebuyers and rating agencies were not as influenced by other stakeholders. In regards to competitive pressures from within stakeholders, lenders and investment institutions were rated to be the most influenced, and homebuyers and rating agencies were again the least influenced.

Analysis of Pressures between and within the Stakeholders

The participants' responses may be explained by their perceptions of different kinds of competition and regulation acting upon these stakeholders. For example, the stakeholders' status as either individuals or companies helps to explain the specific competitive pressures affecting their decisions. As displayed by the data, homebuyers were rated to have lower demand and competition pressures. As individuals whose business was sought after by the loan officers and lenders, if they felt unjustly pressured by another stakeholder, they could go to a competing loan underwriter. In addition, as individuals, homebuyers didn't need to compete as much with their peers in order to be successful in their markets. As such, the status of homebuyers as individual consumers may have impacted the participants' perception of the influences acting upon their decisions.

Loan officers were perceived to be the most influenced by its partner stakeholder; lenders and investment institutions were also rated to experience high competitive pressures. This suggests that the corporate stakeholders felt the greatest inter- and intro- stakeholder pressures. Nonetheless, there was the exception that rating agencies felt among the lowest demand pressures as well as competition pressures.

The variation in demand pressures between the corporate stakeholders may be explained by the function each company served. For example, loan officers may have been rated so highly because they oftentimes directly served as employees for the lenders. If loan officers did not meet the demand of the lenders, they did not just risk losing business; their jobs were threatened as well. However, rating agencies had a more privileged status, so they largely protected against such pressures. Because of their function, they were perceived as almost regulatory agencies in themselves, and so it was their obligation to act independent of external pressures.

The competition for each stakeholder varied; this may account for different ratings for competitive pressures between the stakeholders. For example, lenders and investment institutions were believed to experience the highest competitive pressures. And considering that the size and number of lenders and investment institutions grew rapidly during the housing boom, it is reasonable that this would generate high levels of competition. There were a limited number of mortgages being issued every year, so these organizations in particular had to compete in order to profit from these markets. Nonetheless, competition for the lowest rated stakeholder, the rating agencies, was notably different. The Securities and Exchange Commission regulates which rating agencies are certified to rate securities, so that is a substantial barrier for new competiting rating agencies. As such, there were only a few rating agencies handling the business of many investment institutions, so it is understandable that they would feel less competitive pressure. The results of this section serve as a reminder that in evaluating the decisions made during the housing boom, each stakeholder must be judged according to the specific pressures acting upon them at the time.

Feedback Review

In order to account for specific opinions and insight, the following questions allowed the participants to include their own feedback in regards to assumptions, incentives, and risk management policies pertaining to the stakeholders.

Review of Assumptions among the Stakeholders

In identifying key assumptions held during the housing boom, participants were provided with a preset list of assumptions identified by other literature. From this list, they could select as many of the assumptions that they believe applied to each stakeholder. The results below illustrate how often each assumption was selected by the participants, indicating the perceived influence of each assumption.

The most selected assumption was consistently rising housing prices; this assumption was the most selected assumption across all of the stakeholders. The assumptions that lenders would issue appropriate loans and consistently low interest rates had comparable weight according to the participants, but participants did not believe that sufficient regulation was a significant assumption for the stakeholders. This implies that the homebuyers had trusted the loan officers, which correlates to their high levels of trust in section two, in addition to trusting that macroeconomic variables would remain favorable. In regards to open responses, a participant indicated "they could avoid the legal consequences of their actions" as an additional assumption held by homebuyers.

The data for loan officers complements that of the homebuyers. Similarly, the participants believed that the assumptions of consistently rising housing prices and consistently low interest rates held weight in among the loan officers, denoting general trust in the market. Sufficient regulation was not believed to be significant among this stakeholder. Instead, one participant indicated that the opposite, "No effective oversight/regulation" served as an assumption that drove the actions of the loan officers.

The result for assumptions among lenders and among investment institutions represented a pattern. The participants rated that these stakeholders assumed consistently rising housing prices and consistently low interest rates less often than the previous stakeholders. However, the assumption that risky mortgages could still be resold to investment institutions emerged as a dominant assumption. This may imply that as mortgages were resold and securitized, the economic variables determining the risk of these mortgages became less important. In its place, these stakeholders trusted that the process of securitization would disperse this risk.

With the lenders, the open feedback included: "They could avoid the legal consequences of their actions", and "Credible guarantees that the Government would bail out bad decisions". One participant repeated his/her opinion that "They could avoid the legal consequences of their actions" was a primary assumption for investment institutions as well. This repeated assertion entails that at least one of the participants considered the actions of several stakeholders not only unethical, but illegal.

This greater trust in securitization continued with the rating agencies. However, sufficient regulation was selected more frequently as an applicable assumption. This infers that rating agencies depended on the system of securitization and regulation of securitization to base their decisions. The open responses also supported that the rating agencies somewhat trusted the system rather than seeking better information; participants indicated the assumptions of "Mistaken reliance on recent history", and "Risk models with parameters estimated over much different environment and with different default drivers".

Assumptions that denoted trust in both markets reemerge in the results for investors. According to the participants, their assumptions were more balanced between all aspects of the mortgage to securitization chain. In regards to the mortgage market, the investors assumed consistently low interest rates and rising housing prices, elements that reduced the risk of mortgages defaulting. In addition, the participants believed that investors based their actions upon trust in securitization and sufficient regulation of this process. The notion that investors would assume these things complements the assertion that investors did not understand the risk of these mortgages as well as the other stakeholders.

Review of Incentives among the Stakeholders

As described before, this section follows a similar format to the last. This time, the responses illustrate how much the participants believed certain incentives shaped the actions of the stakeholders. Once again, these incentives were selected due to numerous references in other literature.

According to the participants, homebuyers were motivated the most by the incentives for increased homeownership and better housing. Nonetheless, they were almost as equally allured by long-term investment opportunities. Short –term profits were designated the least influential incentive. As such, the participants believed that speculation and investment was a substantial driver for homebuyers; one participant indicated "Some markets for 'flipping' houses" as a primary incentive for homebuyers.

The participants indicated primarily individualistic incentives for the corporate stakeholders. For example, short-term profits reigned as the principle incentive for loan officers, lenders, investment institutions, and ratings agencies. In addition, for each corporate stakeholder, job promotion opportunities was the second-most selected incentive. "Long-term profits" was also provided by several participants as a key incentive. The distribution of these incentives is more equal with investment institutions and rating agencies, yet the incentives pertaining to personal gain (profits, job promotion) still outweigh the incentives for social goods (investment opportunities, increasing the securities market).

There were only a few incentives mentioned by the literature in the review, so for assessing investors survey participants had only two preset incentives to select: Long-term investment opportunities, and Short-term profits. The participants believed that investors were motivated substantially more by short-term profits than long-term investment opportunities. In fact, one participant notes "No career or pay incentives to think long term "as something that drove the actions of the investors. This trend toward short-term rewards may offer insight to the demand and competitive pressures in the securities market.

Review of Opinions on Risk Management Policies among the Stakeholders

As displayed by the results for the previous five sections, there are a variety of opinions concerning the actions of the stakeholders. This section contains a sample of the different perspectives on the decision-making processes and the risk management policies among the stakeholders.

Do you believe that the stakeholders exchanged the appropriate amount of information as the mortgages were created, securitized, and sold as investments?

(Of the responses, 22 participants replied "yes", and 4 participants replied "no")

> "More information should have been exchanged at all levels"
> "Information was available, but rarely emphasized…Much of the information was disclosed in the fine print"
> "Clearly not. Information asymmetries were part of the problem, but information about new products is often costly - and sometimes impossible - to obtain. In this case risk models were applied that had been developed for different instruments and estimated over different environments. Virtually all commentators - including those within the industry, academia, and the regulatory community - wrote that risks were contained but that the new products had not been through a credit cycle that would allow for accurate estimation of defaults"

Do you believe that the assumption that housing prices would continue to rise was a reasonable one? If so, why do you believe individuals allowed it to govern their actions?

(Of the responses, 4 participants replied “yes”, and 13 participants replied “no”)

> “Any individual's best guess about the future is usually that it will be the same as today”
> “No, based on historical data. But it did govern actions”
> “For the long-term, the assumption was not reasonable. However, for the short-term, many home buyers probably felt that prices would continue to increase and that they needed to "act now" before prices went too high”
> “Maybe. Individuals are motivated by something akin to maximizing their happiness and in the absence of believing that things will not get worse, why not rely on the assumption?”
> “Yes, given the historical record it seemed reasonable that prices would keep rising although no necessarily continuously”

Do you believe that any of the stakeholders magnified the inherent risk from these mortgages through their actions? If so, which stakeholders, and how?

(Of the responses, 17 participants replied “yes”, and 7 participants replied “no”)

> “Yes, those who securitized batches of mortgages”
> “Lenders, because they provided loans to people who didn't meet standard creditworthiness”
> “Yes. All of the stakeholder groups took on too much risk”
> “No, stakeholders under-played the risks involved”
> “Yes. Homebuyers exaggerated qualifications. Mortgage brokers falsified homebuyer qualifications. Lenders did not require documentation. Institutions did not understand collateral cash flows for bonds they sold. Investors did not understand how bonds they purchased were created”
> “No, the risk was inherent and present from the beginning”

Do you believe that each stakeholder was aware of the risk involved in their actions? If so, how do you believe they justified their actions?

(Of the responses, 3 participants replied “yes”, and 23 participants replied “no”)

> “No, they preferred not to know. What value would the information have?”
> “Yes. They justified it by believing housing prices would continue to rise and interest rates would stay low”
> “They may have been, but ‘greed is good’ to the current generation”
> “No. The system was terribly non-transparent”
> “In my view, homebuyers and security investors were the most likely to have been less than well informed. Most homebuyers had little forward-looking risk information. Many were generally aware that risk existed, but based their assessment on the current experiences of others or on information from real estate and finance professionals”

Do you have any suggestions for risk management policies that could prevent a similar situation from occurring in the future?

> “Adequate regulation of new financial instruments. Enforcement of existing regulations for mortgages”

"Yes, focus on medium to long-term profits, not short term ones and remember what occurred in this catastrophe"
"Strong regulation; abolishment of incentive systems based on extremely large bonuses"
"I don't that that there are policies that would prevent this situation without causing undue regulatory burden"
"Mortgage originators need to keep a long term stake in their mortgages"
"The current (summer '09) debacle in home appraising makes it clear that changing governmental policy to achieve less risk will be challenging. The low hanging fruit will be to require mortgage originators to retain at least some credit risk in the loans they originate. In addition, financial institutions will be required to hold more capital with less leverage"
"Allow failures to fail. Do not have a policy of too big or too important to fail. Failure is a necessary part of market organization. It acts as a reality check"

From this feedback, it is clear that there are many legitimate arguments about the market failures in that lead to the mortgage crisis. Experts and members of the academic elite themselves are at odds to discover a reasonable way to assess and address the causes of the mortgage crisis. Perhaps, the broadness of the mortgage crisis makes it nearly impossible to examine it from purely a theoretical perspective.

CONCLUSION

This research consisted of two primary parts: first, two models were derived from the prevailing political and academic perspectives on the stakeholders of the mortgage crisis. These models served to detail several key variables that shaped the stakeholders' decision-making and risk management practices. Then, a survey solicited the opinions of academic experts concerning the variables from these models. Specifically, the participants were asked to provide their opinion on information sharing, trust, pressures, assumptions, and incentives between the stakeholders. The results from this survey highlighted key differences between the stakeholders, namely, the way each was pressured to act as they did. Even though there was variability in these answers, the primary opinion was that information asymmetry did exist between the stakeholders. In addition, the participants did perceive that trust, pressures, assumptions, and incentive systems shaped the decisions of the stakeholders.

Limitations

In reviewing these results, it is essential to identify the limitations of this study. First, this survey solicited the perspectives of those who have studied the mortgage crisis rather than collecting primary data from the stakeholders themselves. As such, the responses must be always considered as opinion rather than fact, so discussion of the data is not as clear.

In addition, the response rate of this survey could have been higher, indicating a more representative sample of the Virginia Association of Economists. As mentioned before, around 400 participants were contacted at their work addresses by post cards, soliciting them to take the survey, and 250 of those participants were reminded via email. In total, there were 38 useable surveys, so the response rate was around 9.5%. This low response rate may be attributed to the fact that the reminders were sent during the summer, and that participants may have not have visited their workplaces regularly. In addition, because the survey was web-based, survey participants had to be able to access the internet and copy the web link in order to take the survey. Because of this, participants were faced with barriers to accessing the survey.

Generalizability

As discussed earlier in this paper, the mortgage crisis' detrimental effect on the economy has made it a much debated subject between politicians, regulators, and the media. Nonetheless, amidst the heated arguments concerning broad regulatory and economic reform, there is still a need for the stakeholders to reassess their decision-making processes and the external forces acting upon them. Ultimately, it was the actions of many individuals which perpetuated the subprime mortgages and securities market, so these individuals should not forget their role in the situation. The results of this research can help further investigations into the relationships of these stakeholders. This literature and primary data cited in this research have demonstrated that many variables influenced the decision-making and risk management policies of the stakeholders, so financial regulators should avoid generalizations when assessing and attempting to prevent another similar occurrence.

Recommendations for Future Work

The purpose of this survey was to provide a comprehensive view of the variables influencing the stakeholders' decision-making processes and risk management policies; as such, this survey tested several variables. Because the mortgage crisis is still a highly relevant topic in understanding the current national economy, there is much room for research. There are two immediate options that may be pursued for future work. First, one could apply a similar model as in this paper and survey each of the stakeholders directly. This would require substantial effort in obtaining a representative sample of these groups, as well as additional tailoring to the survey's design to suit each stakeholder. Nonetheless, soliciting information from the stakeholders themselves would provide first-hand data and clearer analysis. Another way to further this research is to continue surveying economists and researchers, but to focus on only a few variables. This survey explored several variables, but none were investigated in great detail. In particular, a new study could be crafted to further test the nature of information asymmetries between these stakeholders.

REFERENCES

[21] [22] *About the VAE*. (n.d.). Retrieved June 20, 2009, from Virginia Association of Economists: http://www.vaecon.org/vae-about.htm

[12] Authers, J. (2007, November 28). *Special Report: Joseph Stiglitz.* Retrieved August 4, 2009, from Finanial Times: http://www.ft.com/cms/s/2/8a6d7106-91f3-11dc-8981-0000779fd2ac.html

[1] Calomiris, C. W. (2008). *Banking Crises.* Retrieved February 9, 2009, from NBER Reporter: Research Summary 2008: http://www.nber.org/reporter/2008number4/calomiris.html

[4] *House of Cards* (2009). [CNBC Special Report].

[14] [15] [16] [19] Kidder, R. M. (2009). *The Ethics Recession: Reflections on the Moral Underpinnings of the Current Economic Crisis.* Rockland, Maine: The Institute for Global Ethics.

[10] Kolev, I. (2004, July 29). *Mortgage-backed securities.* Retrieved August 3, 2009, from Financial Policy Forum: http://www.financialpolicy.org/fpfprimermbs.htm#_ftn2

[13] Kroszner, R. S. (2007, 22 October). *At the Institute of International Bankers Annual Breakfast Dialogue, Washington, D.C.* Retrieved August 14, 2009, from Board of Governors of the Federal Reserve System: http://www.federalreserve.gov/newsevents/speech/kroszner20071022a.htm

[2] Sowell. *The Housing Boom and Bust.* p. 119

[7] Stiglitz, J. (2008, October 21). *Testimony on "The Future of Financial Services Regulation".* Retrieved July 23, 2009, from House Financial Services Committee: http://www.ft.com/cms/s/2/8a6d7106-91f3-11dc-8981-0000779fd2ac.html

[3] *Subprime Mortgages: Testimony Before the Subcommittee on Financial Institutions and Consumer Credit, Committee on Financial Services, U.S. House of Representatives.* (2007, March 27). Retrieved August 3, 2009, from Board of Governors of the Fereal Reserve System: http://www.federalreserve.gov/newsevents/testimony/Braunstein20070327a.htm

[8] [11] The Bureau of Labor Statistics. (2007, December 18). *Loan Officers.* Retrieved June 13, 2009, from Occupational Outlook Handbook, 2008-09 Edition: http://www.bls.gov/oco/ocos018.htm#nature

[5] U.S. Department of Commerce. (2007, October 26). *Census Bureau Reports on Residential Vacancies and Homeownership.* Retrieved August 3, 2009, from U.S. Census Bureau News: http://www.census.gov/hhes/www/housing/hvs/qtr307/q307press.pdf

[6] Utt, R. D. (2008, April 22). *The Subprime Mortgage Market Collapse: A Primer on the Causes and Possible Solutions.* Retrieved August 3, 2009, from The Heritage Foundation: http://www.heritage.org/Research/Economy/bg2127.cfm

[17] [18] Velasquez, M. G. (1992). *Business Ethics: Concepts and Cases* (3 ed.). Englewood Cliff: Prentice Hall.

[9] [20] Zandi, M. (2009). *Financial Shock: A 360 Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis.* Uppper Saddle River, New Jersey: Perason Education, Inc.

Assessing Information, Trust, and Risk Management in the Recent

1. Informed Consent

* 1. This consent form gives you information about the research study. Please read the information below and check that you agree to participate.

This survey will aid a student undergraduate research study to trace information and trust between the stakeholders of the 2001-2007 housing boom.

Your participation in this study will consist solely of the completion of this online survey. All participation is voluntary. We intend to use the results to clarify some of the misconceptions in the debate of what caused the financial crisis. All responses to this survey will be kept confidential. We do not ask for your name or identifying information. Your identity will not be linked in any way to the research data.

Your participation is voluntary. You may refuse to participate, or may discontinue at any time. If you have a question about your participation in this study, you can contact:

Rebecca Johnsen
rebeccajohnsen@students.rmc.edu

By checking the box below and clicking the “submit” button at the end of the survey you agree to participate in this research.

◯ I have read the terms listed above and consent to them.

Assessing Information, Trust, and Risk Management in the Recent

2. Survey Description

Thank you for agreeing to aid my research in gathering opinions concerning the relationship between stakeholders of the mortgage crisis.

For the duration of this survey, the questions will focus around six primary stakeholders of the housing and financial boom from 2001-2007:

1. Homebuyers: consumers who purchased homes during 2001-2007.
2. Loan officers: mortgage brokers, mortgage bankers, and wholesale lenders that sold mortgage loans to homebuyers during 2001-2007.
3. Lenders: organizations that underwrote mortgage loans and resold them to investment institutions during 2001-2007.
4. Investment institutions: organizations that bought mortgage loans and securitized them for resale to investors during 2001-2007.
5. Ratings agencies: organizations that were certified to rate the mortgage-backed securities for the benefit of investors during 2001-2007.
6. Investors: individuals or larger organizations who purchased the mortgage-backed securities during 2001-2007.

In addition, any reference to "securities" applies to the mortgage backed securities, collateralized debt obligations, and other derivatives created from mortgages issued during the housing boom.

If you have any questions or comments about the phrasing of this survey, please contact Rebecca Johnsen at rebeccajohnsen@students.rmc.edu.

Assessing Information, Trust, and Risk Management in the Recent

3. Information Sharing Between Stakeholders

1. For each of the following stakeholders, how well did each understand the risk of the mortgages they were buying, selling, or assessing?

	Not at all	Barely	Somewhat	Mostly	Completely
Homebuyers	◯	◯	◯	◯	◯
Loan officers	◯	◯	◯	◯	◯
Lenders	◯	◯	◯	◯	◯
Investment institutions	◯	◯	◯	◯	◯
Rating Agencies	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯

2. For each of the following stakeholders, how well did each investigate the risk of the mortgages or mortgage-backed securities they were buying, selling, or assessing?

	Not at all	Barely	Somewhat	Mostly	Completely
Homebuyers	◯	◯	◯	◯	◯
Loan officers	◯	◯	◯	◯	◯
Lenders	◯	◯	◯	◯	◯
Investment institutions	◯	◯	◯	◯	◯
Rating Agencies	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯

3. For each of the following stakeholders, how well did each communicate the risk of the mortgages or mortgage-backed securities they were buying, selling, or assessing?

	Not at all	Barely	Somewhat	Mostly	Completely
Homebuyers	◯	◯	◯	◯	◯
Loan officers	◯	◯	◯	◯	◯
Lenders	◯	◯	◯	◯	◯
Investment institutions	◯	◯	◯	◯	◯
Rating Agencies	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯

Assessing Information, Trust, and Risk Management in the Recent

4. Trust Sharing Between Stakeholders

1. How much do you believe homebuyers relied upon loan officers to sell them responsible mortgages?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

2. How much do you believe loan officers relied upon homebuyers to provide complete information about their creditworthiness?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

3. How much do you believe lenders relied upon the reports of the loan officers to assess the risk of their mortgages?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

4. How much do you believe investment institutions relied upon the reports of the lenders to assess the risk of their mortgages?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

5. How much do you believe rating agencies relied upon the reports of the investment institutions to assess the risk of the mortgage-backed securities?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

6. How much do you believe investors relied upon the reports of the rating agencies to assess the risk of the mortgage-backed securities?

◯ Not at all ◯ Barely ◯ Somewhat ◯ Mostly ◯ Completely

Assessing Information, Trust, and Risk Management in the Recent

5. Pressures During the Housing and Financial Boom

1. How much do you disagree/agree with the following statements pertaining to the relationships between the stakeholders?

	Completely disagree	Mostly disagree	Neutral	Mostly agree	Completely agree
Homebuyers were influenced by loan officers to agree to mortgage loans.	◯	◯	◯	◯	◯
Loan officers were influenced by lenders to increase the number of mortgage loan they sold.	◯	◯	◯	◯	◯
Lenders were influenced by investment institutions to resell more mortgage loans.	◯	◯	◯	◯	◯
Investment institutions were influenced by investors to meet increasing demand for securities.	◯	◯	◯	◯	◯
Rating agencies were influenced by investment institutions to rate securities so that they could be easily resold.	◯	◯	◯	◯	◯

2. How much do you disagree/agree with the following statements pertaining to the relationships within each kind of stakeholder?

	Completely disagree	Mostly disagree	Neutral	Mostly agree	Completely agree
Homebuyers were influenced by other homebuyers to be involved in favorable mortgages.	◯	◯	◯	◯	◯
Loan officers were influenced by each other to remain competitive with other loan officers.	◯	◯	◯	◯	◯
Lenders were influenced by each other to remain competitive with other lenders.	◯	◯	◯	◯	◯
Investment institutions were influenced by each other to remain competitive with other investment institutions.	◯	◯	◯	◯	◯
Rating agencies were influenced by each other to remain competitive with other investment institutions.	◯	◯	◯	◯	◯
Investors were influenced by each other to be involved in large investment returns.	◯	◯	◯	◯	◯

Assessing Information, Trust, and Risk Management in the Recent

6. Assumptions During the Housing and Financial Boom

1. What primary assumptions do you believe drove the actions of the homebuyers?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Lenders would issue appropriate loans

Other (please specify)

2. What primary assumptions do you believe drove the actions of the loan officers?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Lenders would be able to assume the risk of these mortgages.

Other (please specify)

3. What primary assumptions do you believe drove the actions of the lenders?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Risky mortgages could still be resold to investment institutions.

Other (please specify)

Assessing Information, Trust, and Risk Management in the Recent

4. What primary assumptions do you believe drove the actions of the investment institutions?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Risky mortgages could be securitized into safer investments.

Other (please specify)

5. What primary assumptions do you believe drove the actions of the rating agencies?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Risky mortgages could be securitized into safer investments.

Other (please specify)

6. What primary assumptions do you believe drove the actions of the investors?

- [ ] Consistently rising housing prices
- [ ] Consistently low interest rates
- [ ] Sufficient regulation
- [ ] Ratings on securities are failsafe ways to determine risk.

Other (please specify)

Assessing Information, Trust, and Risk Management in the Recent

7. Incentives During the Housing and Financial Boom

1. What primary incentives do you believe drove the actions of the homebuyers?

- [ ] Short-term profits
- [ ] Long-term investment opportunities
- [ ] Better housing
- [ ] Increased homeownership

Other (please specify)

2. What primary incentives do you believe drove the actions of the loan officers?

- [ ] Short-term profits
- [ ] Job promotion opportunities
- [ ] Increasing homeownership
- [ ] Promoting freer credit

Other (please specify)

3. What primary incentives do you believe drove the actions of the lenders?

- [ ] Short-term profits
- [ ] Job promotion opportunities
- [ ] Increasing homeownership
- [ ] Promoting freer credit

Other (please specify)

Assessing Information, Trust, and Risk Management in the Recent

4. What primary incentives do you believe drove the actions of the investment institutions?

- [ ] Short-term profits
- [ ] Job promotion opportunities
- [ ] Increasing the securities market
- [ ] Providing more investment opportunities

Other (please specify)

5. What primary assumptions do you believe drove the actions of the rating agencies?

- [ ] Short-term profits
- [ ] Job promotion opportunities
- [ ] Increasing the securities market
- [ ] Providing more investment opportunities

Other (please specify)

6. What primary incentives do you believe drove the actions of the investors?

- [ ] Short-term profits
- [ ] Long term investment opportunities

Other (please specify)

Assessing Information, Trust, and Risk Management in the Recent

8. Risk Management between the Stakeholders

Thank you so much for your feedback. This section is optional, but we would value your input.

1. Do you believe that the stakeholders exchanged the appropriate amount of information as the mortgages were created, securitized, and sold as investments?

2. Do you believe that the assumption that housing prices would continue to rise was a reasonable one? If so, why do you believe individuals allowed it to govern their actions?

3. Do you believe that any of the stakeholders magnified the inherent risk from these mortgages through their actions? If so, which stakeholders, and how?

4. Do you believe that each stakeholder was aware of the risk involved in their actions? If so, how do you believe they justified their actions?

5. Do you have any suggestions for risk management policies that could prevent a similar situation from occurring in the future?

Assessing Information, Trust, and Risk Management in the Recent

9. Submission Page

Thank you so much for your participation in this survey.

As mentioned before, your input in this survey will aid undergraduate research conducted under Randolph-Macon College's Shapiro Undergraduate Research Fellowship.

If you have any further questions or comments concerning the survey, please email Rebecca Johnsen at rebeccajohnsen@students.rmc.edu.

Sincerely,

Rebecca Johnsen