Steered Wrong:
Brokers, Borrowers, and Subprime Loans

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EXECUTIVE SUMMARY

*I*n recent years, a majority of subprime loans made in the United States were originated by mortgage brokers, who can be characterized as the "engine" of the subprime market. The rapid growth of subprime lending, which in the past decade grew from a small niche enterprise to a major driver of the U.S. housing market, was made possible by thousands of mortgage brokers across the country who delivered billions of dollars of subprime loans to mortgage lenders, who in turn packaged and sold them to Wall Street investors.

Because of their extensive involvement in originating subprime mortgages, mortgage brokers have had significant influence on which loans were originated, who received them, and at what price. Ideally, mortgage brokers present their clients with available financing options and help them choose the most suitable loan. However, the dismal performance of subprime mortgages today has put brokers and their actual practices under increased scrutiny.

In this report, we focus specifically on broker pricing patterns by systematically comparing the cost of loans provided by mortgage brokers to those provided by retail lenders, such as banks, credit unions, and mortgage bankers. Our research addresses three major questions. First, how do the costs of loans originated by brokers compare to those originated by retail lenders? Second, if significant pricing differences exist between lenders and brokers, do those differences vary according to the strength of a borrower's credit? Third, how do any pricing differences experienced by borrowers change over the scheduled life of a loan?

We find significant differences between broker and lender pricing on home loans, primarily on mortgages originated for borrowers with weaker credit histories. During the first year of the loan, borrowers with credit profiles in the subprime range pay statistically more for brokered loans than they would have if they had obtained their loan directly from a lender. Over a four-year period, a typical subprime borrower pays over $5,000 more, and over the 30-year life of the loan, the cost gap grows to almost $36,000.

This analysis is based on 1.7 million mortgages originated between 2004 and 2006. In our analysis, we compared "matched pairs" of loans to contrast the experience of borrowers who received loans from brokers and retail lenders. By matching loans based on major risk factors (including credit score, loan type, level of income documentation, and loan-to-value and debt-to-income ratios), this approach allows us to meaningfully measure differences in costs on mortgages that represent comparable risks.

The results of our analysis reveal striking differences in loan costs depending on the origination channel. Among our findings:

Significant disparities exist between broker and lender pricing. After matching loans on objective factors that affect interest rates, the analysis reveals that interest payments were significantly higher on broker-originated mortgages in the majority of risk categories we examined.

Disparities are greatest for subprime borrowers. For people with weaker credit, brokers consistently charged higher interest rates than retail lenders. A typical subprime borrower was slated to pay $5,222 more during the first four years of a $166,000 mortgage compared to a similar borrower who received a loan directly from a lender. Over thirty years, this borrower would pay $35,874 more in interest payments, equivalent to an interest rate approximately 1.3 percentage points higher than a similar borrower with a retail loan.

Cost disparities grow greater after initial years. For subprime borrowers, significant disparities are apparent even during the first year of the loan. However, because so many subprime mortgages come with short-term introductory rates that rise substantially when they adjust, the cost disparities become more pronounced after the first four years of a loan.

Prime borrowers generally do not pay more for brokered loans. In general, people with higher credit scores—those who received prime loans—did *not* pay higher interest on broker-originated loans. In fact, some borrowers with very high credit scores who received loans from brokers achieved modest savings, although long-term savings were largely limited to fixed-rate loans.

Typical cost (benefit) of brokered loan compared to retail loan

Market Segment	Time in Loan		
	1 Year	4 Years	30 Years
Subprime	$1,174	$5,222	$35,874
Near Prime	$154	$1,316	$7,094
Prime	($179)	($42)	($1,767)

Understanding Brokers' Pricing Patterns

Our analysis supports the conclusion that brokers react to market incentives predictably: they seek to maximize both the number of loans they originate and their revenue per loan. However, since charging too much per loan could drive away potential customers, brokers must find the optimal balance between these two factors. We posit that brokers shift this balance according to their perception of their customer's credit profile. Specifically, when serving customers with stronger credit, we believe brokers emphasize loan volume over revenue per loan, since customers with higher credit ratings generally have more options for financing and may be more aware of their alternatives.

People with weaker credit scores naturally pay more for mortgages than people with strong scores. However, it is very difficult for borrowers with weaker credit or less experience in financial matters to know precisely how much more is appropriate, especially since, unlike prime rates, subprime rates are not generally publicly available. In addition, subprime loans tend to be much more complex than the fixed-rate mortgages that have long dominated the prime market, making their costs more difficult for borrowers to compare.

Accordingly, we hypothesize that brokers have been able to take advantage of this situation by emphasizing maximum revenues per loan for subprime borrowers. While retail lenders are probably not immune from these dynamics, we believe the effects on the costs of retail loans are less pronounced due to more regulation, better internal controls, and concerns about reputational risk.

Not only do brokers have strong incentives to charge more per loan when this option is available with subprime borrowers, but they also have specific mechanisms available in subprime loans that

facilitate overcharging: yield-spread premiums (YSPs) and prepayment penalties. A YSP is an extra payment that brokers receive from lenders for delivering a mortgage with a higher interest rate than that for which the borrower qualifies. In the subprime market, lenders usually will pay the maximum YSP only if a loan contains a prepayment penalty. The penalty ensures that the lender will recoup their YSP payment either through excess interest collected over time or from the penalty fee, should a borrower refinance to avoid those interest costs.

Our findings are consistent with previous research indicating that brokers tend to steer subprime borrowers towards higher-cost loans even if these borrowers qualify for lower-cost loans. Yet, people who employ a mortgage broker often mistakenly assume that the broker is working for them to find the most affordable loans that will support sustainable homeownership. The results in this report demonstrate that, too often, this is not the case for subprime borrowers. The common misperception by consumers is understandable given that, until the explosive growth of the subprime market, lenders generally would not approve mortgages unless they had substantial evidence that the loan was affordable and sustainable. Home buyers and homeowners have therefore trusted their brokers as mortgage professionals to help them choose a suitable loan. This misplaced trust has likely been a factor in the current foreclosure crisis, as people who were trying to achieve homeownership or accrue savings through refinancing were given overpriced or unaffordable loans.

Based on our findings, we make the following recommendations:

POLICY RECOMMENDATIONS

- Ban yield-spread premiums and prepayment penalties on subprime loans;

- Create a system of accountability where lenders and investors share responsibility for brokered loans; and

- Establish clear broker duties to their clients.

CONSUMER RECOMMENDATIONS

- Obtain multiple quotes before committing to a home loan, with at least some from retail lenders like banks or credit unions. Do not assume that any lender will give you the best or even a good rate.

- Ensure that at least one loan option from each lender is a standard fixed-rate mortgage that pays off principal and interest every month.

- Examine both interest rate and total fee costs. Ask questions about changes in scheduled payments and how high payments can go.

- Avoid loans that have prepayment penalties that can restrict refinancing and support the yield spread premiums that lead to higher interest costs.

- Before applying for a loan, review your credit reports and credit score.

I. BACKGROUND

A. Brokers and Their Role in the Mortgage Process

A mortgage broker is "an individual or firm that brings borrowers and lenders together for the purpose of loan origination."[1] Mortgage brokers are generally involved in all aspects of loan origination. They identify and market directly to consumers, collect all relevant information from potential borrowers and submit loan applications to lenders. They determine which types of products to offer borrowers and whether borrowers will pay above market rates on those products. However, they generally do not use their own funds to close loans. Importantly, though their customers routinely rely on them as experts to help select lenders and loan products, mortgage brokers often assert that they are independent contractors and not agents of either borrowers or lenders.

Despite their integral involvement in mortgage transactions, there is scant regulation of mortgage brokers compared to traditional lenders. While banks, for example, are subject to regular oversight and regulatory examinations that scrutinize the quality and legality of the loans they originate, the regulatory reviews applicable to brokers are largely focused on ensuring that brokers meet certain benchmarks in order to be licensed. It is notable, however, that some states have moved to more aggressively enforce such regulations in an effort to weed out irresponsible mortgage originators.[2]

While mortgage brokers are active across the entire credit spectrum, they have played a major role in the rapid growth of the subprime mortgage market. Originally a small, niche market catering to borrowers who were only marginally ineligible for prime loans, in the last decade subprime lending has grown rapidly to become a major driver of the U.S. housing market. From 1996 to 2006, the annual size of the subprime mortgage market grew from $97 billion to $640 billion, increasing its share of total mortgage originations from 12 percent to 21 percent.[3]

This growth was driven by the willingness of subprime lenders to rely on third-party originators. Rather than build brick-and-mortar storefronts, subprime lenders have recruited brokers and, to a lesser degree, correspondent lenders to market and originate their loans. Together, the loans originated by these third-party originators are described as "wholesale" loans. In 2003, 48 percent of subprime loans were originated by wholesale lenders. By 2006, the last year of our study period, estimates from trade publications reported that such loans accounted for 63 to 81 percent of all subprime loans.[4]

There are clear business advantages to wholesale lending. By employing the services of brokers, lenders have been able to lower their fixed costs and expand operations into new markets without having to hire new loan officers, acquire office space, or invest heavily in consumer marketing. Similarly, relying on brokers has allowed lenders to avoid the costs associated with layoffs and other operational cutbacks when mortgage activity declines due to economic downturns or interest rate increases.[5] When the broker system works well, it arguably can also provide "one-stop shopping" to borrowers, helping them compare and choose from myriad mortgage products offered by different lenders. In addition, with limited information available on the prices associated with brokered home loans, many advocates of brokers have pointed to traditional economic theory, which assumes that borrowers, like all consumers, are rational and will therefore only use brokers if it is in their financial interest to do so.

In spite of these benefits, the high proportion of subprime loans originated by brokers and the current subprime foreclosure crisis have raised many questions about how well brokers are serving their customers. In part, these questions have been fueled by the withdrawal of several large wholesale lenders from the subprime marketplace. For example, in July 2007, Wells Fargo shut down wholesale operations while continuing to originate subprime retail loans. Several predominately wholesale lenders, including Aegis, New Century Financial and Fremont, have terminated their lending altogether.[6] While these recent retreats from subprime brokered lending suggest the market has become increasingly skeptical of such loans, nothing has fundamentally changed in either the incentive structure and regulation of brokers.

Mortgage Shopping and Brokers

"Rational choice theory," an analytic framework often used for evaluating economic and social behaviors, assumes that people faced with choices will choose the best option based on their own set of preferences and constraints. Applying this framework to mortgage shopping would suggest that, as rational actors, borrowers will only use mortgage brokers if it is in their financial interest to do so. However, research on borrower behavior has shown that, at least in many cases, borrowers face serious barriers to effectively shopping for mortgages.

A 2007 study by Harvard University researchers finds that borrowers have a limited ability to analyze and compare multiple, complex mortgage products. The study finds that the complexity of mortgage pricing hampers both borrowers' ability to assess risk and to comparison shop. Such difficulties are exacerbated by aggressive and sometimes deceptive marketing practices that further hinder borrowers from making choices that are in their best interest.[7]

A 2003 study by the AARP also casts doubt on the notion that borrowers only choose brokers when it is beneficial to do so. The report published the results of a survey on the experiences of older borrowers who received loans from brokers versus lenders. Conducted on over 1,000 borrowers age 65 and older who refinanced their homes between 1999 and 2000, the survey found that 33 percent of broker-originated loans were subprime, compared to only 17 percent of lender-originated loans.[8] In addition, the study also found that 70 percent of borrowers with broker-originated loans relied "a lot" on their brokers to find the best mortgage for them, despite brokers having no fiduciary responsibilities to borrowers.[9] Finally, the AARP survey found that older borrowers who received their loans from brokers were less satisfied with their loans than retail borrowers. Specifically, borrowers with brokered loans were more than twice as likely to report that: 1) they did not receive a loan that was best for them; 2) they did not feel the rates and terms of their mortgage were fair; 3) they did not feel that they were given accurate and honest information; and 4) their loan was worse than they expected.[10]

Borrower Perception of Mortgage Received

	Borrowers with Brokered Loans	Borrowers with Retail Loans
Did not receive a loan that was best for them	21%	9%
Did not feel the rates and terms were fair	23%	8%
Did not receive accurate and honest information	19%	7%
Received loans that were worse than expected	20%	8%

Source: AARP

B. Broker Regulation

Brokers are generally regulated at the state level, but such regulation is primarily limited to licensure rather than substantive lending standards. Since they do not hold deposits like a traditional bank, they are not subject to safety and soundness reviews by federal or state banking regulators. In addition, since it is lenders that set underwriting criteria and sell the loans off to investors in mortgage-backed securities, brokers are largely exempt from requirements of independent ratings agencies and investors like Fannie Mae and Freddie Mac.[11] While in theory federal regulators may hold lenders responsible for third-party relationships that involve financial transactions, in practice such oversight is limited.

All states license brokers, but the breadth and depth of state broker regulation varies considerably. Although the majority of states now license individual brokers, some still only require licensing at the firm level. The typical state licensing regime includes basic requirements like criminal background checks, bonding, and educational or experience requirements. However, without substantive requirements, like a state predatory lending law or statutes that establish affirmative duties of a broker to a borrower, licensing in itself generally does not guard against most abusive lending practices. In other words, licensing statutes act primarily as enforcement mechanisms for substantive protections but do not actually establish protections themselves. Some states do combine both procedural and substantive protections in their broker regulation. For example, North Carolina's mortgage broker licensing statute specifically makes compliance with the state predatory lending law a condition of being lawfully licensed.[12] In addition, North Carolina and a number of other states establish, by statute or common law, affirmative duties that guide brokers' services to borrowers and often direct that brokers must act in the interest of the borrower.[13] These protections, of course, are by no means universally available.

Nonetheless, many borrowers perceive brokers to be acting on their behalf. A 2003 survey of mortgage borrowers 65 or older conducted by AARP found that 70 percent of borrowers who received broker-originated loans relied "a lot" on their brokers to find the best loan for them.[14] Similarly, a survey of African-American borrowers, a group that has disproportionately received loans in the subprime market, found that half mistakenly believed that brokers had a legal obligation to find them the best loan.[15] Indeed, brokers often market themselves as mentors or advisors to potential borrowers.[16]

C. Broker Compensation

The lack of broker regulation might be of less concern if the financial incentives of brokers were more closely aligned with consumers' interests. However, broker compensation is tied primarily to the volume of mortgages they originate and the rates on those mortgages. Their compensation is not generally linked to the appropriateness or the performance of the loans they originate.

Brokers typically receive two types of revenue: an origination fee and a yield spread premium (YSP). The origination fee is paid directly by the borrower and is generally calculated as a percentage of the loan amount. In addition, borrowers routinely (and, often, unknowingly) pay above market interest rates on loans originated by brokers so that the broker can earn an up-front cash payment called a yield spread premium (YSP). A YSP is an extra payment that brokers receive from lenders for delivering a mortgage with a higher interest rate than that for which the borrower qualifies. In the subprime market, lenders usually will pay the maximum YSP only if a loan contains a prepayment penalty. The penalty ensures that the lender will recoup their YSP payment either through excess

interest collected over time or from the penalty fee, should a borrower refinance to avoid those interest costs. These penalty fees are for substantial amounts, typically 6 months interest on 80% of the prepaid balance. For a $150,000 loan balance at 8% interest, a penalty in this form would amount to about $4,800. (See Appendix 1 for a detailed example of how YSPs work.)

This compensation structure encourages brokers to originate as many loans as possible at the highest prices possible. These incentives are consistent with the practice of loan "steering" (i.e. placing borrowers into unnecessarily expensive loans). Since the compensation structure can be similar for retail loan officers, whether brokers or retail lenders are more likely to be engaged in such activities is largely an empirical question to be explored below.

How might brokers set prices?

Brokers optimize their revenue along two primary dimensions. First, they seek to maximize the number and volume of loans closed, both of which affect the origination fees they collect. Second, they seek to maximize their revenue per loan through collection of yield-spread premiums. In fact, these dimensions can be seen to be in tension. A broker that offers a consumer an overpriced loan risks losing the business if the consumer identifies a less expensive option. However, a broker that maximizes loan volume by offering discount pricing will make far less money on each transaction. Consequently, brokers must find an optimal balance between these two factors.

We hypothesize that this balance will be a function of a broker's subjective evaluation of borrowers' willingness to pay above market rates. Specifically, we predict that brokers anticipate that borrowers with weaker credit will have fewer financing options and be less knowledgeable and confident in their credit dealings. Accordingly, it is logical that brokers would use this leverage to extract greater payments from such borrowers. It also follows that brokers would be more concerned about losing borrowers with strong credit to competing credit providers and so seek to offer these borrowers highly competitive rates. We are not the first to articulate this possibility, as Professor Guttentag made the point as early as 2000.[17]

To test the hypothesis, we compare the costs of similar brokered and retail loans extended to borrowers with similar risk profiles. While retail lenders likely are not wholly immune from the incentives faced by brokers, we believe that their internal controls, fair lending compliance regimes, and concern over reputational risk would make such pricing practices less pronounced.

If our hypothesis is correct, we would expect that brokers will charge borrowers with worse credit positions more for their loans relative to similar borrowers who receive their loans from a retail lender. Moreover, because we believe that mortgage brokers may fear losing "prime" borrowers to competitors, we anticipate that the cost of brokered loans to borrowers with strong credit will be highly competitive with retail loans. In fact, it is possible that the lower costs associated with brokers might be passed on to these borrowers.

We also think that the difference in loan costs will not be evenly evidenced over loans' scheduled lives. We hypothesize that brokers will take advantage of a relative dearth of public or private regulatory oversight to aggressively market adjustable-rate mortgages with short-term introductory rates. If true, the difference in costs between brokered and retail loans will change when introductory rates expire.

II. DATA

Our analysis uses information on mortgages contained in a database provided by McDash Analytics.[18] The McDash database contains information on individual loans collected from approximately 15 mortgage servicers. While it varies from year to year, Table 1 below shows that, during our study period, McDash's market coverage is roughly 40% of that of the Home Mortgage Disclosure Act (HMDA).

Table 1: Number of Originations: First-Lien, Owner-Occupied, Conventional Purchase and Refinance Mortgages

	2004	2005	2006
McDash	4,213,937	4,615,911	3,414,372
HMDA	10,754,587	10,539,191	8,708,257
Estimated Market Coverage	39.2%	43.8%	39.2%

The McDash data is rich in detail, including over 70 variables related to loan characteristics and performance, such as loan amount, loan purpose, borrower credit score, loan-to-value ratio (LTV), debt-to-income ratio (DTI), documentation level and origination channel. Our analysis is of 30-year first-lien, owner-occupied conventional home mortgages originated between 2004 and 2006 in the 50 states and the District of Columbia. Loans with balloon payments or mortgage insurance were excluded from the analysis.[19] These selection criteria and the requirement that each matching variable used in our analysis contain a valid measurement results in an analytic data set of 1.7 million loans. Our selection process, and particularly the requirement that both debt-to-income and income documentation fields be fully populated, disproportionately eliminates certain loans from the dataset. To ensure that our analysis is representative of the original set and reflects the geographic distribution of lending in the U.S. during the study period, we apply a system of weights (see Appendix 3 for more details).

Examining our analytic data set, brokered loans account for 29% of our weighted observations. While Table 2 shows that brokers appear to serve similar borrowers in terms of their loan purpose, credit (FICO) score, loan-to-value (LTV) ratio, and debt-to-income (DTI) ratio, differences in loan types are apparent. Without controlling for market segment (e.g., subprime or prime), brokered loans were somewhat more likely to be ARMs, much more likely (17.3% versus 0.6%) to carry prepayment penalties, and four times as likely to allow for negative amortization compared to retail loans.

Table 2. Analysis dataset: Summary Statistics

	Unweighted			Weighted		
	All Loans	All Retail	All Brokered	All Loans	All Retail	All Brokered
Proportion of Observations	1	.568	.432	1	.712	.288
Loan Type						
ARM (%)	46.7	41.2	53.9	40.1	38.1	45.1
FRM (%)	53.3	58.8	46.1	59.9	61.9	54.9
Jumbo (%)	19.7	18.1	21.9	15.2	14.8	16.2
Prepayment Penalty (%)	9.2	1.6	19.2	5.4	0.6	17.3
Loan Purpose						
Purchase (%)	42.7	44.2	40.6	45.8	47.7	41.2
Refinance (%)	57.3	55.8	59.4	54.2	52.3	58.8
Low/No Doc (%)	33.7	27.0	42.4	27.4	23.8	36.4
Negative Amortization (%)	30.3	22.1	41.1	14.8	7.7	32.3
Interest Only (%)	18.2	18.1	18.2	15.9	16.6	14.3
FICO						
Mean	718.6	727.2	707.1	721.5	727.0	707.9
Median	726	735	715	731	736	716
Std	60.7	55.8	64.9	60.2	57.2	65.0
LTV						
Mean	66.9	64.8	69.7	68.7	67.9	70.7
Median	71.9	69.8	75	74.5	73.9	75
Std	16.4	17.4	14.5	15.5	16.0	14.0
DTI						
Mean	33.2	33.0	33.4	32.7	32.6	33.0
Median	31	30	32	29	28	31
Std	17.4	18.0	16.6	18.3	18.9	16.5

III. METHODOLOGY

To compare broker-originated loans with retail loans with similar risk profiles, we employ a matched-pair analysis and compare the average total interest payments on loans originated by each of the two origination channels. First, as shown in Table 3, we create 4,032 potential groups of loans that have similar characteristics along many of the dimensions that determine price and risk. By subdividing the data in this fashion, our analysis accounts for the fact that lenders may have different eligibility and pricing models for loans with different characteristics along some or all of these dimensions. Further, this methodology is preferable to a multiple regression model because it allows the impact of broker-origination on loan cost to vary for different matched pair groups.

After subsetting our 1.7 million loans into these categories, only 1,623 of the 4,032 potential groups had 20 or more loans originated by both brokers and retail lenders, the minimum standard we set for conducting an analysis. For the loans in these 1,623 categories, we calculate the total interest payments for each loan over the term of the loan. The interest payments for regular fixed-rate mortgages were calculated based on a standard amortization schedule. For adjustable rate mortgages, total interest payments were decomposed into two parts: interest payments paid during the initial fixed-rate period and interest payments paid during the adjustable-rate period. Interest payments for the initial period were calculated using the initial rate; for the adjustable-rate period, an interest rate was derived by adding the loan's margin to an index rate, taking into account any limitations on first or subsequent loan adjustments specified in relation to the loan.[20]

Table 3: Variables for Creating Matched Pairs of Loans

Variable	Number of Categories	Description of Categories
Year	3	1) 2004 2) 2005 3) 2006
Jumbo Status	2	1) Above jumbo limit; 2) Below jumbo limit.
Loan Purpose	2	1) Purchase; 2) Refinance.
Loan Type	2	1) Fixed rate mortgage; 2) Adjustable rate mortgage.
Documentation	2	1) Full documentation; 2) Low or no documentation.
Debt-to-Income Ratio	3	1) Less than or equal to 0.36; 2) Greater than 0.36 but less than or equal to 0.55; or 3) Greater than 0.55
Loan-to-Value Ratio	4	1) Less than or equal to 0.7; 2) Greater than 0.7 but less than or equal to 0.8 3) Greater than 0.8 but less than or equal to 0.9; 4) Greater than 0.9.
FICO score	7	1) Greater than or equal to 520 but less than or equal to 560; 2) Greater than 560 but less than or equal to 600; 3) Greater than 600 but less than or equal to 640; 4) Greater than 640 but less than or equal to 680; 5) Greater than 680 but less than or equal to 720; 6) Greater than 720 but less than or equal to 760; 7) Greater than 760 but less than or equal to 850.
TOTAL NUMBER OF POSSIBLE "MATCHED PAIR" GROUPS: 3 * 2 * 2 * 2 * 2 * 3 * 4 * 7 = 4,032		

For all loans, adjustments to interest payments were made to account for the general cost of mortgage credit at the time at which the loans were originated and costs routinely associated with the use of a condominium as collateral (see Appendix 3 for more information on methodology). In this analysis, we assume that loans that allow for negative amortization in fact repay on a standard amortization schedule. This assumption likely underestimates the cost of brokered loans, since brokers disproportionately originate such loans and considerable evidence exists that borrowers tend not to pay down fully-amortizing principal levels on these loans and, consequently, are incurring higher interest costs than those we estimate.[21] We assumed that loans with interest-only periods followed their scheduled payment plan, including no amortization of principal during the interest-only period. Finally, within each subset of loans for retail and brokered mortgages, we compare weighted average interest payments per $100,000 borrowed.[22]

IV. FINDINGS

The results of our analysis reveal striking differences in loan costs depending on the origination channel:

1) **Significant disparities exist between broker and retail lender pricing.** The analysis reveals that interest payments were significantly higher on broker-originated mortgages for each year of our study period. Additional interest payments on brokered loans tended to be greater for adjustable-rate, jumbo and purchase loans, as well as loans with full income documentation.

2) **Disparities are greatest for subprime borrowers.** For people with weaker credit, brokers consistently charged higher interest than retail lenders. A typical subprime borrower who received a brokered loan paid $5,222 more in interest during the first four years of a $166,000 mortgage compared to a similar borrower who received a loan directly from a lender. Over the scheduled life of a loan, this borrower would pay $35,874 more in interest payments, an amount equivalent to an interest rate 1.3 percentage points higher than a similar borrower with a retail loan.

3) **Cost disparities for subprime borrowers vary over time.** For subprime borrowers, the additional interest costs of brokered loans are apparent even during the first year of the loan. The average monthly cost disparity between brokered and retail loans then increases between the first and fourth years of loan life and then decreases, but remains positive, over the remaining loan term.

4) **Prime borrowers paid roughly the same for brokered loans as for retail loans.** In general, people with higher credit scores—those who received prime loans—paid about the same in interest costs regardless of whether their loans were retail or brokered. In fact, some borrowers with very high credit scores achieved modest savings from brokered loans.

FINDING ONE: There are significant differences in the interest costs associated with broker and retail-originated loans.

Our matched-pair analysis confirms that loans originated by brokers tend to be more expensive over their scheduled terms than retail loans, particularly for borrowers who would likely be considered subprime. For the 1,623 risk-product categories that had sufficient numbers of loans to conduct the analysis,[23] 870 (54%) showed brokered loans to be statistically more expensive than retail loans. In contrast, 243 (15%) categories showed retail loans to be more expensive, while 510 (31%) did not show statistically-significant differences between the two channels.

Table 4, below, aggregates the results from these 1,623 risk/product categories by various loan and borrower characteristics. Specifically, Table 4 creates weighted averages of the costs or savings resulting from broker originations in each risk/product category and performs t-tests to determine the significance at these aggregated levels.[24]

Table 4. Summary of 30-Year Differences in Interest Payments on Brokered Loans Over Retail Loans by Select Loan Characteristics, 2004–2006

Variable	Category	Broker sample size	Retail sample size	Additional broker cost per $100,000 borrowed (in dollars)
Origination Year	2004	320,693	711,695	2,478***
	2005	304,237	831,862	2,473***
	2006	262,765	663,702	3,173***
Purpose	Purchase	360,284	1,045,943	5,251***
	Refinance	527,411	1,161,316	1,091***
JUMBO	Above	144,799	312,172	859***
	Below	742,896	1,895,087	3,939***
Loan Type	ARM	381,999	790,188	4,234***
	FRM	505,696	1,417,071	830***
Documentation	Full Doc	566,613	1,690,502	3,449***
	Low/No Doc	321,082	516,757	1,823***
DTI	(0,36]	582,395	1,488,551	578*
	(36,55]	246,592	441,883	7,773***
	(55,100]	58,708	276,825	3,552***
FICO Range	(520,560]	12,460	15,719	43,260***
	(560,600]	29,872	41,942	29,723***
	(600,640]	76,538	114,793	16,685***
	(640,680]	133,268	263,970	6,597***
	(680,720]	193,593	458,688	1,431***
	(720,760]	207,677	550,245	-600*
	(760,850]	234,288	761,901	-983***
LTV	(0,70]	334,378	911,116	-257
	(70,80]	530,772	1,236,851	4,286***
	(80,90]	15,512	24,910	31,439***
	(90,100]	7,033	34,382	28,784***

Notes:
(1) One, two and three asterisks denote statistical significance at the 95%, 99% and 99.5% confidence levels, respectively. This convention is carried through in all subsequent tables.
2) The categories in this table are not mutually exclusive. For example, an ARM loan above the jumbo loan limit threshold originated in 2004 would be reflected in the ARM, Above and 2004 rows.

On average, the additional interest payment scheduled to be paid over 30 years by borrowers with brokered loans ranged between $2,473 and $3,173 on loans made between 2004 and 2006. Average additional payments on brokered loans varied by loan type, with higher additional payments for adjustable rate than fixed rate ($4,234 vs $830), purchase loans than for refinance loans ($5,251 vs $1,091), and non-jumbo than for jumbo ($3,939 vs $859). Additional payments also tended to be higher for loans with full documentation of income. Most importantly, as will be explored below, the additional payments were much higher for borrowers with lower credit scores.

FINDING TWO: The additional cost of brokered loans compared to retail loans is greatest for subprime borrowers.

Importantly, brokered loans tended to be more expensive for borrowers with credit scores that could be considered subprime, while they were less expensive in a few credit score categories that would widely be considered prime. As shown in Table 4, on average, borrowers with credit scores of 640 or below who obtained a loan from a broker would pay $16,685-$43,260 in extra interest payments per $100,000 borrowed over the scheduled life of the loan compared to borrowers with comparable credit scores who received a retail loan. This amount decreases, but is still positive and significant, through the near-prime segment (credit scores of 640-720).[25]

While Table 4 provides a summary by aggregating the results of our 1,623 risk/product categories into one-dimensional categories of individual and loan characteristics, Table 5, below, displays price disparities at more detailed levels of creditworthiness, aggregating the results from the 1,623 risk/product categories by combinations of FICO, DTI and LTV. The light gray shaded cells are those in which brokered loans are statistically more expensive than retail loans, while the light green shaded cells are those in which retail loans are more expensive. Results in unshaded cells were not different from zero by a statistically significant amount.

Table 5. Summary of 30-year additional interest payments per $100,000 borrowed on brokered loans by FICO, DTI and LTV

Credit Score Category	FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
		LTV Ranges				LTV Ranges				LTV Ranges			
		(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
Subprime	[520,560]	35,020***	40,986***	73,588***	-14,334	44,606***	48,101***	44,124	80,539	40,920	48,652***		
	(560,600]	15,084***	26,324***	49,771***	52,230***	25,179***	39,177***	42,213*	77,556***	10,232	34,859**		
	(600,640]	1,933	11,643***	36,999***	36,211**	11,342***	31,148***	38,177***	51,421***	661	17,839***		
Near-Prime	(640,680]	-626	3,901***	28,706***	20,774	3,006***	17,876***	35,106***	40,724***	-361	9,103***	52,356**	80,131
	(680,720]	-1,193***	338	24,686***	10,203	127	7,348***	35,964***	33,933*	344	2,934	25,593*	9,764
Prime	(720,760]	-1,639***	-1,068**	13,198*	-5,392	-1,087**	2,287*	28,700***	13,474	-301	990	17,864	17,646
	(760,850]	-1,643***	-925**	16,080**	-6,420	-1,229***	232	23,368*	-7,604	-526	905	-230	1236

Table 5 reinforces that brokered loans tend to be statistically more expensive than retail loans for borrowers with weaker credit profiles. Generally speaking, within a given DTI range, borrowers with lower credit scores and higher loan-to-value ratios pay more for loans from brokers than from retail lenders. Furthermore, the magnitude of the disparity increases as FICO decreases within individual DTI/LTV ranges. For example, a borrower with a DTI ratio of 40, LTV of 75, and a credit score of 700 took on $7,348 in extra interest on a brokered loan per $100,000 borrowed. In contrast, a borrower with the same LTV and DTI but with a credit score of 580, took on an additional $39,177 per $100,000 borrowed as a result of having a brokered loan. For borrowers with credit scores up to and including 640, across all categories of DTI and LTV, the weighted average of additional costs in interest payments on a median loan size of $166,000 for subprime borrowers who obtained their loans through brokers is $35,874 over the scheduled term of the loan.

FINDING THREE: Cost disparities between brokered and retail-originated loans vary over time, consistent with brokers disproportionately originating adjustable-rate mortgages (ARMs) with shorter-term introductory rates.

The results in Table 5 have the advantage of capturing the full scheduled interest costs of a loan, taking into account key differences, including the length and depth of introductory discount rates, contractual limits on periodic interest rate changes, various margins that apply during adjustable rate periods, and the effects of interest-only periods. An important limitation to the measurements in Table 5, however, is that they apply to a 30-year time period. In practice, most homeowners refinance or sell their home and pay off their loan long before 30 years have passed. In fact, the average life of a recent home loan is commonly reported at three to five years.[26] Consequently, we also estimate the difference in interest costs between brokered and retail loans over a four-year time horizon. In addition, to better inspect the effects of introductory rates, we also calculate cost differences over a one-year horizon. The results are shown in Tables 6 and 7. Table 8 summarizes these results by market segment and shows the weighted aggregated results from all three time horizons.

Table 6: Summary of 4-year additional interest payments per $100,000 borrowed on brokered loans

Credit Score Category	FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
		LTV Ranges				LTV Ranges				LTV Ranges			
		(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
Subprime	[520,560]	5,673***	6,497***	9,929***	-1,911	6,170***	7,592***	5,608	10,739	5,685	6,144***		
	(560,600]	2,166***	4,041***	7,338***	8,305***	3,410***	5,513***	5,552*	10,438***	1,081	3,716*		
	(600,640]	302	1,909***	5,334***	6,270**	1,375***	4,280***	5,426***	7,460***	-113	1,756*		
Near-Prime	(640,680]	-7	778***	4,540***	3,098	376*	2,412***	4,982***	5,684***	-266	847*	6,815**	11,906
	(680,720]	-96	297*	3,643***	1,514	-10	1,144***	4,855***	4,698*	-182	263	3,080**	1,302
Prime	(720,760]	-193*	86	1,611	-825	-178**	425*	3,981***	1,839	-141	-37	2,456	2,294
	(760,850]	-219**	49	1,854	-979	-223***	102	3,311*	-1,037	-98	81	-34	187

Table 7. Summary of first year additional interest payments per $100,000 borrowed on brokered loans

Credit Score Category	FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
		LTV Ranges				LTV Ranges				LTV Ranges			
		(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
Subprime	[520,560]	1,411***	1,667***	2,486***	-478	1,332***	1,849***	1,393	2685	1405	1,368**		
	(560,600]	428***	943***	2,089***	2,268***	752***	1,265***	1,385*	2,614***	89	542*		
	(600,640]	15	327***	1,654***	1,690*	329***	987***	1,608***	2,202***	-112	254		
Near-Prime	(640,680]	-88*	50	1,178***	873	80	607***	1,401***	1,549***	-115*	224	1,700*	3302
	(680,720]	-105***	-71*	823***	384	-41	252***	1,357***	1,156*	-117***	-13	610*	325
Prime	(720,760]	-112***	-113***	223	-194	-73***	32	1,086***	494	-96*	-77	577	573
	(760,850]	-96***	-89***	353	-248	-79***	-31	796*	-260	-99***	-48	-8	47

Table 8. Average additional interest payments per $100,000 on brokered loans by credit score

FICO Range & Segment	Additional Interest Payments (Total)			Additional Interest Payments (Per Year)		
	1-year	4-year	30-Year	1-year	4-year	30-Year
Subprime						
(520,560]	$1,593***	$6,562***	$43,260***	$1,593***	$1,641***	$1,442***
(560,600]	$961***	$4,231***	$29,723***	$961***	$1,058***	$991***
(600,640]	$525***	$2,411***	$16,685***	$525***	$603***	$556***
Weighted Average: 520-640	$707	$3,146	$21,611	$707	$787	$720
Near-Prime						
(640,680]	$183***	$1,013***	$6,597***	$183***	$253***	$220***
(680,720]	-$4	347***	$1,431***	-$4	$87***	$48***
Weighted Average: 641-720	$72	$614	$3,309	$72	$154	$110
Prime						
(720,760]	-$81***	34	-$600*	-$81***	$9	-$20*
(760,850]	-$80***	-67	-$983***	-$80***	-$17	-$33***
Weighted Average: 721-850	-$81	-$19	-$799	-$81	-$5	-$27

Table 9: Typical total additional interest payments on brokered loans by market segment

Market Segment	Median loan size	Time in Loan		
		1 Year	4 Years	30 Years
Subprime	$166,000	$1,174	$5,222	$35,874
Near-Prime	$214,000	$154	$1,316	$7,094
Prime	$221,000	-$179	-$42	-$1,767

The overall pattern of borrowers with weaker credit profiles paying higher interest payments on brokered loans compared with similarly-situated retail borrowers holds in the shorter-term results shown in Tables 6 and 7. Of course, the magnitude of the cost differentials is smaller under shorter time horizons than over the full 30-year term. Specifically, Table 8 shows that the combined weighted average additional cost for borrowers with credit scores of 640 or below range from $525 to $1,593 per $100,000 borrowed over the first year (average of $707) and $2,411-$6,562 over four years (average of $3,146). Given a median loan size of $166,000 among subprime borrowers in our dataset, this corresponds to an additional $1,174 in interest payments on a brokered loan over one year and $5,222 over four years, compared to $35,874 over 30 years. Table 9 further summarizes these results and associates them with median loan sizes to provide a measurement of the difference in interest costs experienced by typical borrowers in each market segment over various time periods.

Interestingly, together, Tables 6-9 suggest that brokers placed a greater emphasis on shorter-term rates than did retail lenders. Two patterns help elucidate this finding. First, the one-year results in Table 7 show thirteen subsets of risk categories where brokered loans carried interest costs that were statistically lower than retail loans, compared to only four subsets for the four-year results (Table 6) and seven subsets for the 30-year results (Tables 5). Second, the magnitude of the differences in average interest payments between brokered and retail change over time. As shown in Table 8, the additional interest costs associated with brokered loans for borrowers with credit scores up to 680 increases more than four fold between one and four years. For each of these categories of borrowers, the additional cost per year then decreases between four and thirty years. For example, the average additional interest cost over one year associated with brokered loans for borrowers with credit scores between 600 and 640 is $525. However, the average additional cost over four years is $2,411 (or $603 per year) and $16,685 over 30 years (or $556 per year).

The fact that the average additional cost per year changes over different time horizons is likely attributable to differences in the rates and structures of adjustable-rate mortgages. With brokers disproportionately originating ARMs with introductory periods of less than four years, the additional costs associated with rate resets comes earlier for brokered loans. Meanwhile, with retail ARM loans disproportionately resetting after the fourth year, the additional cost associated with rate resets comes later for retail loans. This helps explain why the average additional interest payments per year increases between the first-year and four-year measurements and decreases for the 30-year measurements. The fact that the average additional interest payments per year is positive for all time horizons suggests that, in addition to brokered ARMs having shorter introductory periods, they also tend to have higher introductory rates.

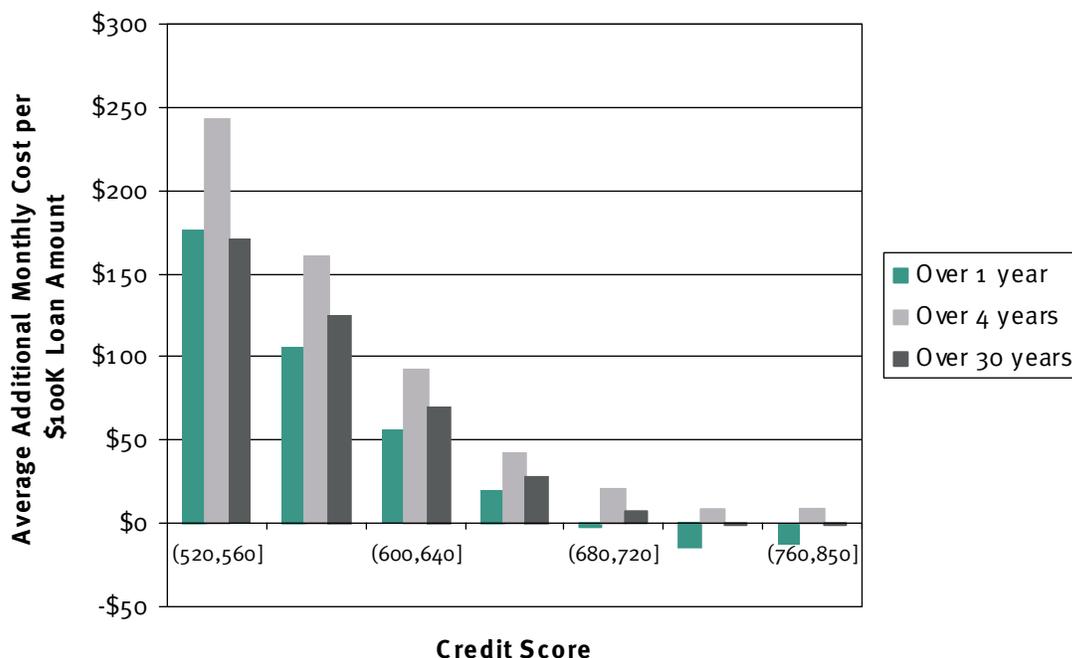**Figure 1. Average Additional Monthly Interest Payments: ARMs**

Figure 1 visually depicts how differences in the interest costs of ARMs between brokered and retail channels affect monthly interest payments of borrowers with various credit scores over various timeframes.[27] For all categories of credit, the average difference in monthly interest costs between brokered loans and retail loans increases between the initial year and the same measurement taken over the first four years of the loan term. On the other hand, the magnitude of the increased costs for brokered loans decreases when one compares the average monthly difference over four years to that of the full scheduled 30-year term. This is likely due to lower levels of interest payments in the later years as principal payments become higher, as well as the relatively late rate resets of retail loans.

Tables 9 and 10, below, confirm that, while the higher cost of brokered loans for borrowers with weaker credit profiles holds true for fixed-rate loans, the differences are much more pronounced for adjustable-rate mortgages. Tables 11 and 12 display the average total cost disparities between the two channels for ARM loans only, over four years and one year, respectively.

Importantly, for almost every category of borrowers for which brokers were associated with a higher cost over the first year (i.e. the gray shaded cells in Table 12), the additional cost remains significant and increases by more than four-fold over four years (Table 11). In addition, for every category of borrowers for which brokers were associated with lower costs in the first year of the loan (i.e. the green shaded cells in Table 12), the four-year differences in costs were no longer statistically significant. These findings reinforce the notion that brokered loans tend to have higher introductory rates than retail loans for many subprime borrowers and shorter introductory periods—that is, are faster to reset.

Table 9. Summary of 30-year additional interest payments per $100,000 borrowed on brokered loans, fixed-rate loans only

FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
	LTV Ranges				LTV Ranges				LTV Ranges			
	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
[520,560]	22,792***	29,947***	73,114***	-14,147	18,905***	36,430***	44,607	80,505	6,773	15,670		
[560,600]	11,323***	16,791***	60,356***	54,412***	10,930***	20,528***	42,176*	77,330***	-4,227	-809		
[600,640]	2,908***	8,677***	50,267***	29,518	4,359**	15,781***	29,087**	40,206***	-3,479	-752		
[640,680]	330	3,849***	49,911***	8,210	549	7,409***	35,145***	29,586***	-2,055	823	40,163	
[680,720]	-1,191**	731	43,126***	3,415	-1,444***	1,752*	31,952***	26,427	-2,114***	-399	17,296	9,785
[720,760]	-1,843***	-162	31,148***	-8,423	-2,043***	-602	21,233***	6,090	-1,777**	-264	8,141	17,677
[760,850]	-2,197***	-947*	29,780*	-6,123	-2,409***	-1,721***	16,338*	-7,588	-2,001*	-451	-213	1,187

Table 10. Summary of 30-year additional interest payments per $100,000 borrowed on brokered loans, adjustable-rate loans only

FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
	LTV Ranges				LTV Ranges				LTV Ranges			
	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
[520,560]	61,958***	69,265***	107,950*	100,988	82,195***	87,516***	106,710*	107906*	91,832	81,347*		
[560,600]	24,724***	40,794***	95,758***	80,311*	57,223***	56,619***	94,411***	101604***	37,826*	63,668***		96,931
[600,640]	2,381	17,806***	70,102***	85,734***	21,851***	53,318***	81,669***	71737***	7,840	35,174***	54,486*	85,280
[640,680]	-703	6,848***	47,419***	67,786***	6,391***	32,984***	68,182***	74338***	1,506	15,258***	38,696*	80,663
[680,720]	-743	2,174**	26,842*	49,402**	1568	17,529***	68,756***	74375***	2,692*	6,572*	37,154	
[720,760]	-1,069*	-8	9,921*	37,195	-319	10,127***	44,343*	68969	848	2,912		
[760,850]	-863	637	11,623		533	7,281***	29708		1,969	4,386***		

Table 11: Summary of 4-year additional interest payments per $100,000 borrowed on brokered loans, adjustable-rate loans only

FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
	LTV Ranges				LTV Ranges				LTV Ranges			
	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
[520,560]	7,833***	8,545***	8,506*	7,964	8,142***	8,043***	7,424	8,695	10,697*	8,962***		7,965
[560,600]	2,840***	5,614***	7,340***	9,130**	5,574***	6,248***	7,052***	9,432***	4,373*	7,182***		9,151
[600,640]	221	2,534***	6,557***	8,010**	2,544***	5,257***	7,142***	6,878***	581	3,590***		11,958
[640,680]	-33	1,110*	5,498***	6,567***	768*	3,637***	6,723***	6,097***	-204	1,434*	7,097	
[680,720]	-29	595*	3,520*	7,911***	291	2,364***	6,098***	6,759**	-49	565	4,438*	
[720,760]	-144	285	1,013	5,732	9	1,573***	5,671***	8,355	-87	-23		
[760,850]	-87	426	980		-7	1,149***	3,157		221	428*		

Table 12. Summary of first year additional interest payments per $100,000 borrowed on brokered loans, adjustable-rate loans only

FICO	DTI=(0,36]				DTI=(36,55]				DTI=(55,100]			
	LTV Ranges				LTV Ranges				LTV Ranges			
	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]	(0,70]	(70,80]	(80,90]	(90,100]
[520,560]	1,646***	1,849***	1,037	312	1,091*	1,075*	432	422	2,861	2,106*		
(560,600]	370*	1,178***	1,218***	1,943	856***	1,253***	467	1,234***	579	1,044*		2,472
(600,640]	-70	326	1,184***	1,369	553***	858***	989*	1,555*	-78	553		2,508
(640,680]	-168***	-36	1,020***	1,447***	140	705***	1,165*	1,030*	-143	405	1,773	3,304
(680,720]	-181***	-182***	658	2,005***	-44	339**	1,102*	1,199	-168*	21	685	
(720,760]	-189***	-270***	-72	1,764	-87	85	1,261*	2,169	-182*	-223*		
(760,850]	-147***	-223***	71		-89*	0	397		-190***	-182		

FINDING FOUR: Prime borrowers who obtained loans from brokers generally experienced no additional costs compared to retail.

Among loans to stronger credit borrowers, the 30-year results shown in Table 5 reveal mixed results. Generally, stronger credit borrowers with brokered loans that carried lower LTV ratios experienced savings compared to their similarly situated counterparts who received retail loans. However, stronger credit borrowers with somewhat higher LTV ratios experienced increases in interest rate costs compared with their retail counterparts. Table 9 shows that in general, prime borrowers who obtained loans from brokers experienced no additional costs compared to those who received their loans from a retail lender. Over a common four-year loan life, prime borrowers essentially pay the same interest no matter whether they received their loan from a broker or a retail lender.

Turning to the results, as shown in Table 5, in six DTI/LTV combinations associated with borrowers with stronger credit profiles (credit scores greater than 720), retail loans are actually more expensive in the higher FICO ranges. Conversely, in five instances, these borrowers actually received loans with increased costs from a broker relative to retail-originated loans. Table 8 shows the weighted average 30-year difference for a borrower with a credit score over 720 was $799 less per $100,000 borrowed. As shown in the shorter-term results in Tables 6 and 7, the long-term patterns continue to hold. In fact, the one-year results displayed in Table 7 show that brokered loans carry lower interest costs to even more subsets of borrowers. However, at the four-year mark, such differences are already erased, with brokers only having a cost advantage in four subsets of stronger credit borrowers. The weighted average difference in costs over the first year was $81 less per $100,000 borrowed and $19 less over four years.

Figures 2 and 3 below visually present and augment findings two and three for borrowers with DTI ratios of zero to 36 and 36 to 55, accounting for the vast majority of all lending. Within each figure, four sets of graphics serve to illustrate results for LTV ranges of 0-70, 71-80, 81-90, and 91-100. Each graphic then displays the difference in 30-year interest costs between brokered and retail loans (vertical axis) versus borrowers' credit scores (horizontal axis). In addition, the figures also show whether the reported findings are statistically significant (shaded circle) or not significant (open circle). Finally, the different size circles represent the relative dollar volume of loans in each group: the bigger the circle, the greater proportion of the market accounted for by that group of borrowers' loans on a dollar volume basis.

The general trend across these charts shows that borrowers with higher credit scores pay virtually no additional interest and occasionally pay modestly less interest when they receive their loan from a broker versus a retail lender, and borrowers with lower credit scores pay more interest. What's more, the figures illustrate that the additional interest paid in brokered loans increases dramatically as credit scores decline. The figures also help clarify that the results vary considerably between loans that would be considered prime and those that are subprime. While the greater amounts of interest payments charged to subprime borrowers are striking, the greater volume of loans (in the prime market) evidence scant disparities.

Figure 2a:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 0 to 36
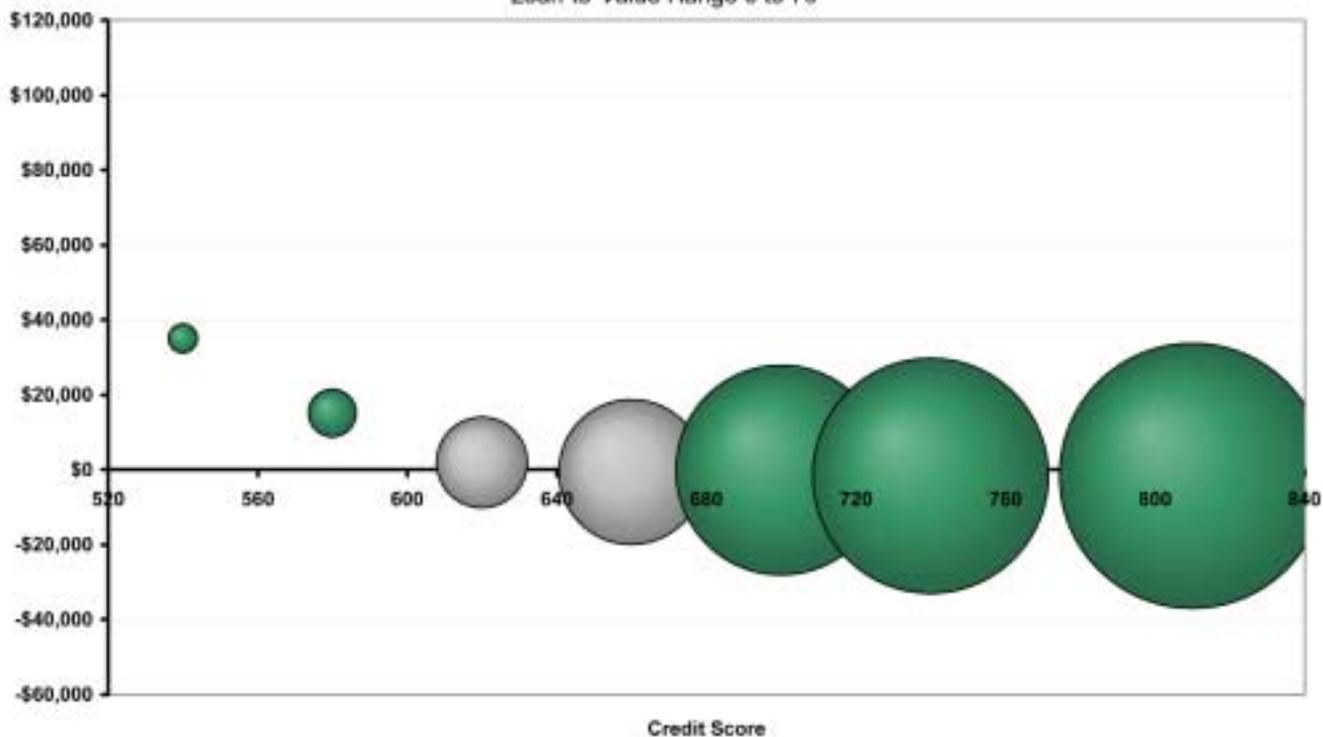Loan-to-Value Range 0 to 70

Credit Score

Figure 2b:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 0 to 36
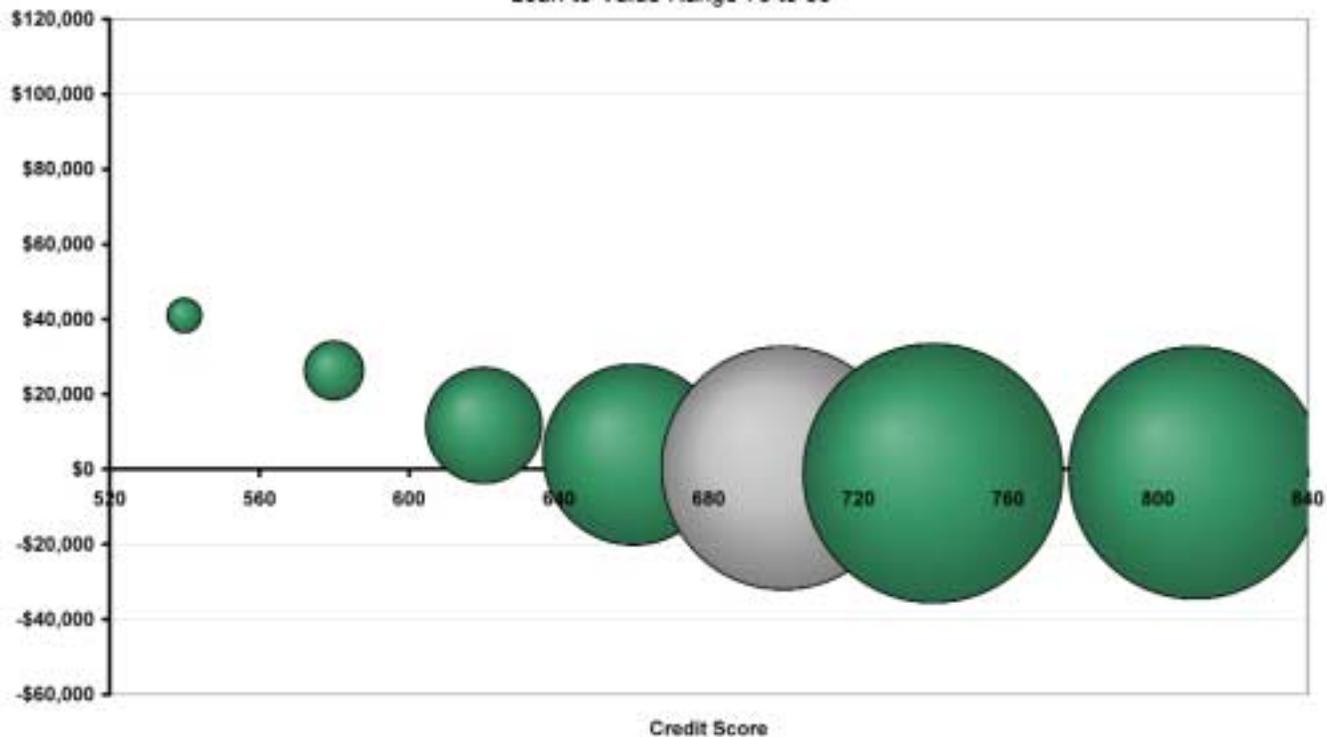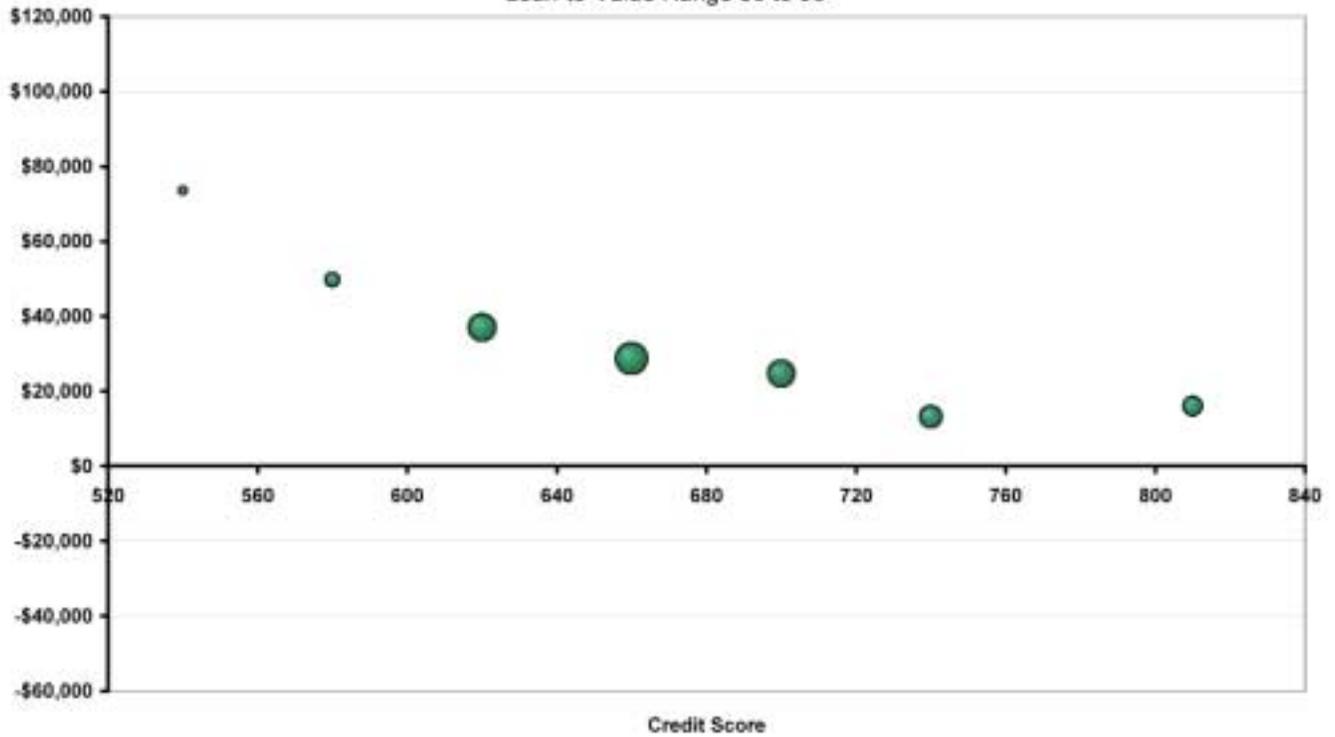Loan-to-Value Range 70 to 80

Credit Score

Figure 2c:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 0 to 36
Loan-to-Value Range 80 to 90

Figure 2d:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 0 to 36
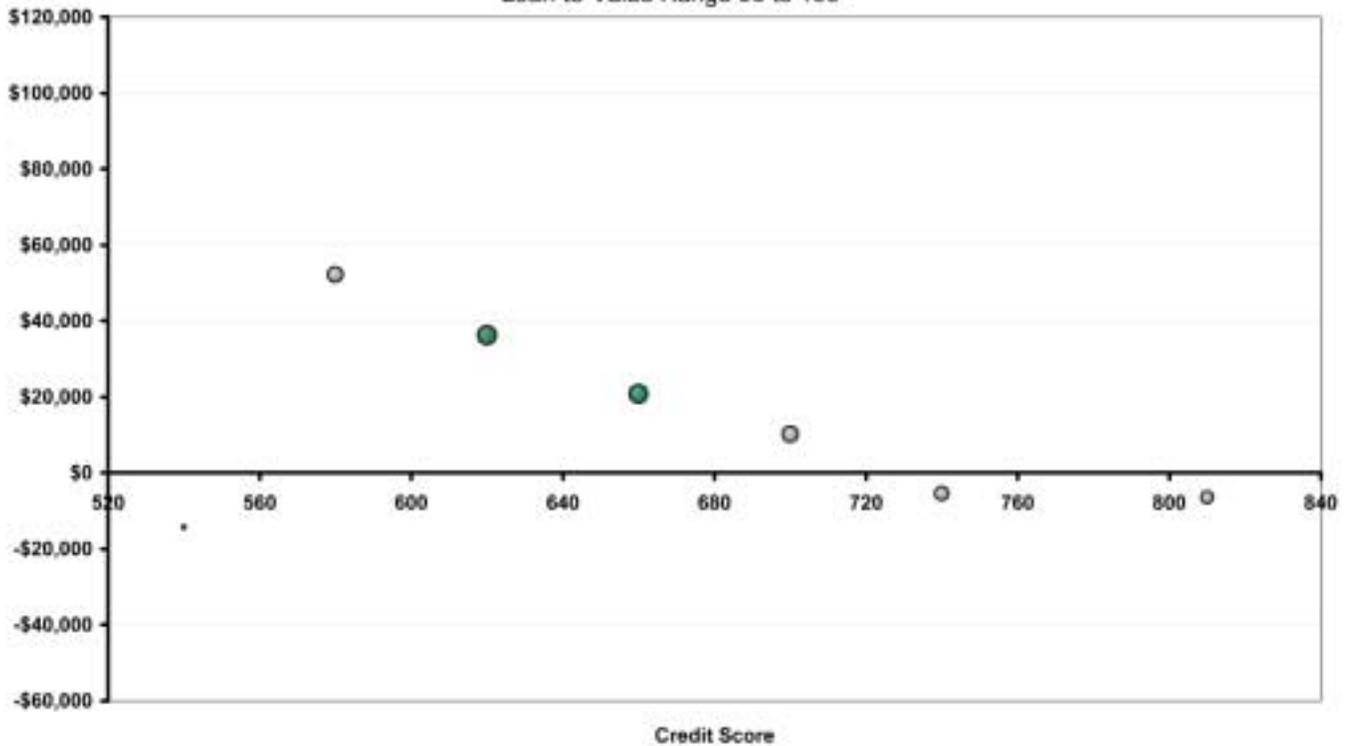Loan-to-Value Range 90 to 100

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 36 to 55
Loan-to-Value Range 0 to 70

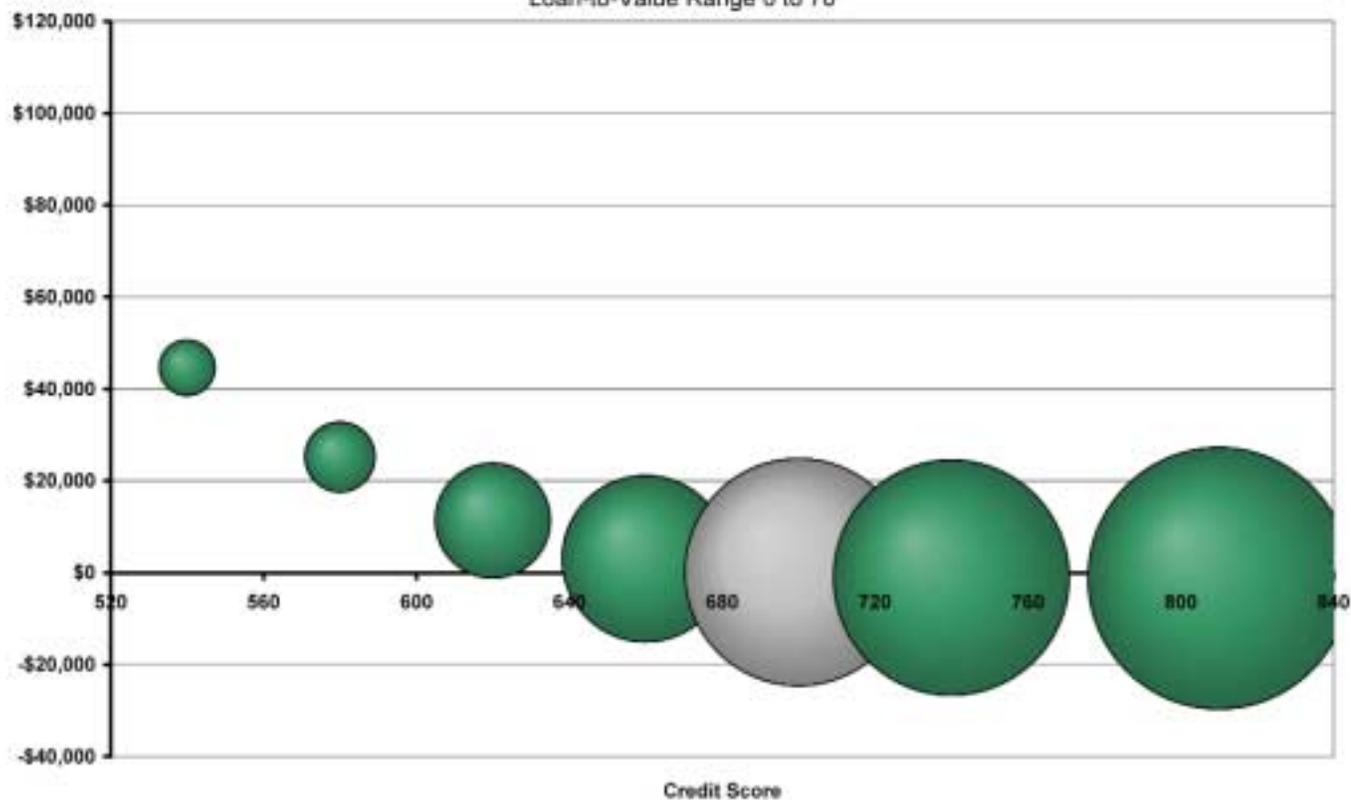Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 36 to 55
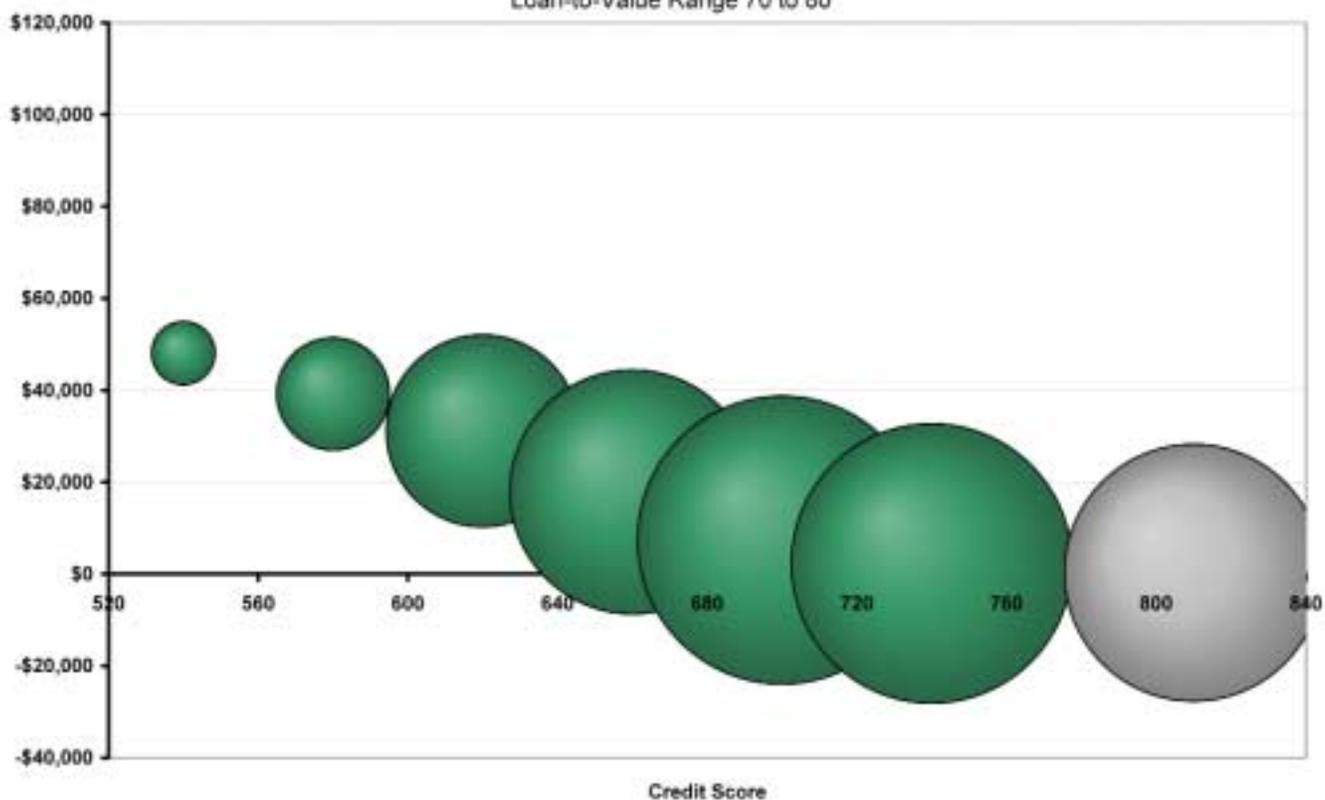Loan-to-Value Range 70 to 80

Figure 3c:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 36 to 55
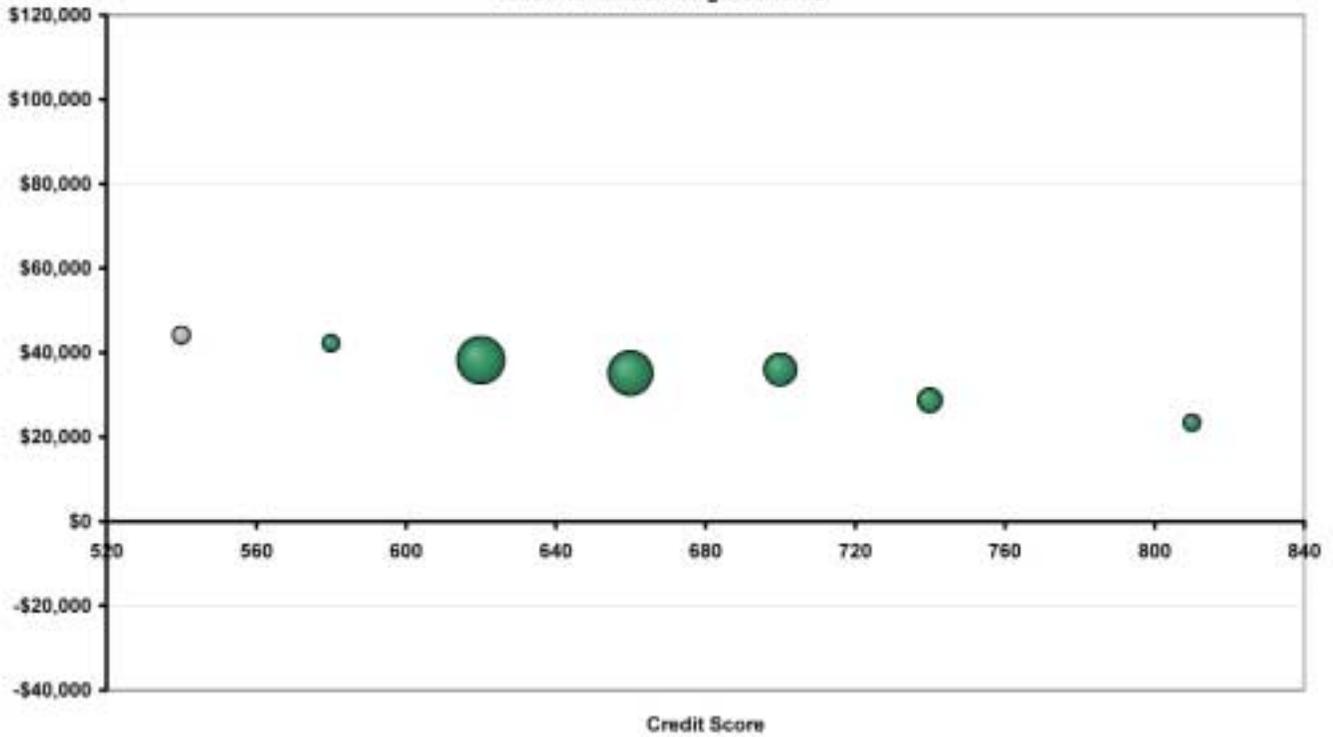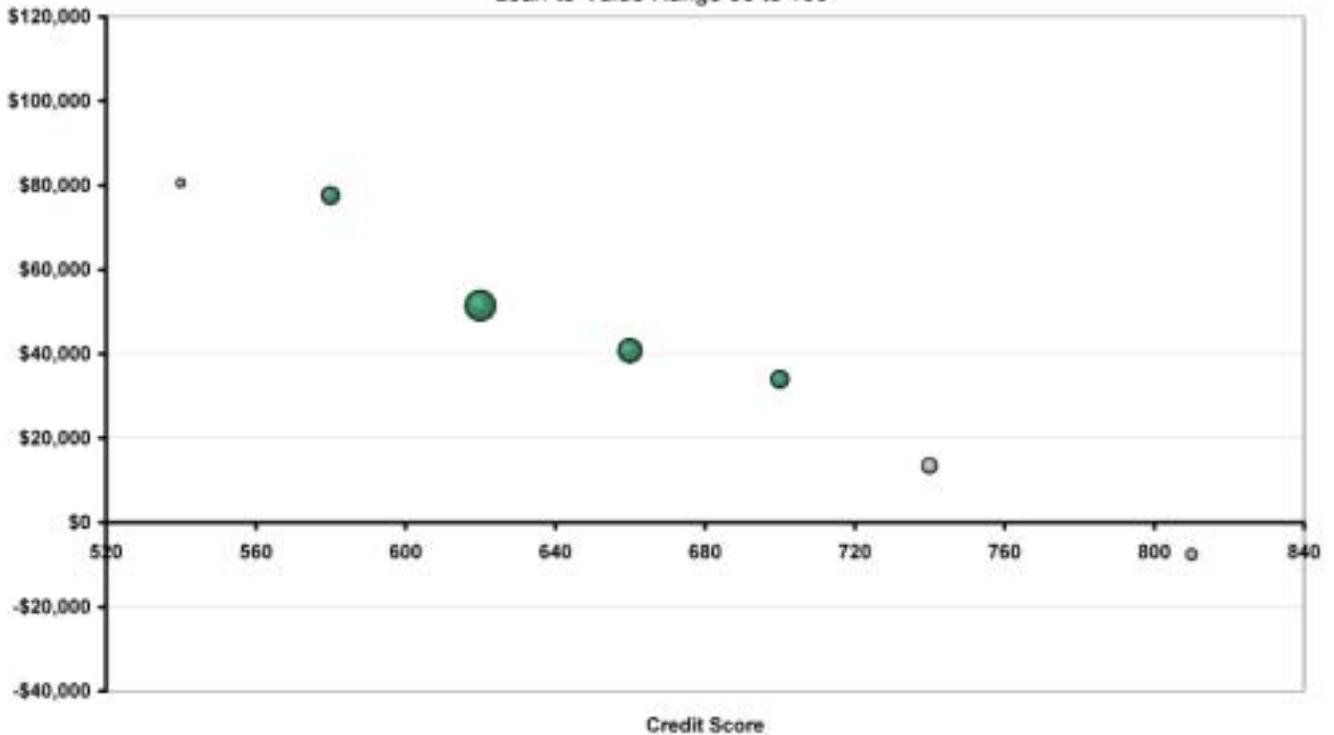Loan-to-Value Range 80 to 90

Figure 3d:

Additional Cost per $100,000 Borrowed
Debt-to-Income Ratio Range 36 to 55
Loan-to-Value Range 90 to 100

Limitations

Like all empirical analyses, there are limitations to our efforts. First, our data does not have any information on upfront fees paid by borrowers and, as a result, the cost of the loans is measured exclusively by interest rate. However, we also do not adjust for the cost of prepayment penalties, the overwhelming majority of which are on brokered loans. As a result, our estimates understate the true cost of brokered loans (See Appendix 4). In addition, we have seen no evidence to suggest that brokered loans carry lower upfront fees in such a way that would offset the higher interest payments we document. In fact, research suggests that the borrowers only receive 25 cents in reduced fees for every one dollar paid in YSPs to brokers and that upfront fees are actually less for retail loans than for brokered loans.[28] Finally, our estimates suggest that, on average, brokered loans for borrowers with credit scores of 640 or below pay an additional $3,146 per $100,000 amount in interest over a typical four year loan life. This is roughly the equivalent of an extra 3 percent of the loan amount in upfront fees. Therefore, even if these brokered loans did carry lower fees, it is extremely unlikely that they would be low enough to equalize the total cost of the loan.

Second, our data set was not large enough to control for geography in the analysis. It is possible that broker originations are concentrated in areas where rates tend to be higher, in which case the cost associated with going to a broker might actually reflect the geographic distribution of brokered loans. However, to the extent that any geographic concentrations of broker-originated loans are correlated with risk and product characteristics, our matched pair analysis will avoid biased results.

Third, it is possible that our model omits other information that is correlated with both loan pricing and origination channel. For example, it is possible that borrowers who tend to rely on brokers are those who are somehow more difficult to serve and, therefore, are more likely to receive more expensive loans. However, by subsetting the data among so many dimensions, we were able to control for the vast majority of risk factors that lenders generally use to underwrite and price loans.

Fourth, within our subsetting methodology, we are unable to account for instances in which a borrower is steered to a loan with limited or no documentation of income or assets. Such steering is troubling because it leads to more expensive loans for borrowers even as it reduces work on loan originators and can even make it easier for incomes to be falsified. If either brokers or retail lenders are more likely to use such a tactic, the resulting increase in the cost of loans originated by that channel would not be evident from our methodology. The descriptive statistics indicate that brokers were more likely to originate such loans, but, of course, provide no basis for determining whether the reduced documentation was appropriate.

Our findings show that, for many categories of subprime borrowers, brokers deliver more expensive loans than retail lenders, with additional interest payments for borrowers with credit scores of 520 to 640 ranging from $11,300 to $73,600 per $100,000 borrowed over the 30-year scheduled loan life. Meanwhile, for a few subsets of prime borrowers, brokers seem to deliver some savings, though the magnitude of these savings is quite modest, ranging from $900-$1,600 per $100,000 borrowed over the loan term.

These findings are consistent with the view that brokers seek to maximize their revenue by finding the optimal balance between high loan volume and the highest compensation per loan, and that the balance they choose is influenced by their subjective evaluation of a borrower's willingness to pay. Specifically, these findings support the hypothesis that brokers perceive people with lower credit scores to be more vulnerable to accepting loans that are more expensive than they qualify for. They therefore, in this explanation, attach premiums to the interest rates that they offer these borrowers in order to secure the yield spread premiums from lenders. At the same time, concerned that borrowers with higher credit scores are more likely to seek other financing options, brokers offer them rates that are highly competitive.

Consistency with existing literature

These findings also are consistent with published findings from at least three other research efforts. Our primary advantage over these previous efforts is the size and richness of our data on loans that span the full credit spectrum. First, researchers affiliated with the Federal Reserve System found indirect evidence that brokers were disproportionately associated with higher-rate loans.[29] In that study, the authors cited a greater incidence of higher-rate lending outside of depository institutions' Community Reinvestment Act (CRA) assessment areas. They argued that originations outside the CRA assessment area were more likely to be brokered, but lacking information on the relative risk profiles of borrowers, did not reach any conclusions about whether the greater incidence of higher-rate loans was attributable to risk, broker pricing, or some other explanation. Second, they are consistent with published research from Jackson and Burlingame who conclude their empirical analysis of broker versus retail pricing with the observation that yield spread premiums "allow mortgage brokers to extract materially higher payments from consumers, most likely from consumers who are less sophisticated and more vulnerable to abusive practices."[30] Third, they are consistent with results from Alexander et al, who analyzed data from loans made between 1996 and 1998 from a national subprime lender and concluded that brokered loans carried an interest rate a half percentage point higher than similar retail loans.[31]

Finally, the present results are inconsistent with results from one paper from researchers associated with the Financial Services Research Program and consistent with results from a second paper from the same source. Anshasy et al used data from the American Financial Services Association's (AFSA) subprime mortgage database to find that brokered loans have a negative and significant impact on the APR of subprime loans.[32] In a more recent paper by Elliehausen et al, the authors rely on the same dataset to, again, model the APR of subprime mortgages. Though not the focus of the paper, the authors include loan channel as one of the independent variables in their pricing model. For the two dominant mortgage types, i.e. fixed rate and hybrid-ARMs, broker-origination is associated with an increase in the APR of the loan of 0.65 to 0.89 percentage points.[33]

Compensation Structure, Loan Type and Revenue Maximization

It is predictable that brokers attempt to maximize their profits. The notable aspect of our findings is that the fundamental compensation structure of brokers seems to lead to adverse results for homeowners with weaker credit. Suppose broker compensation consisted of a flat fee for each loan originated and was tied to loan performance. Brokers would still have an incentive to originate as many loans as possible, but would have to balance it with ensuring that borrowers had a reasonable ability to repay. If this were true, brokers' and borrowers' interests would be in closer alignment and brokers could maximize their revenue by providing good service to borrowers and good loans to lenders.

In reality, the existing compensation structure for brokers is quite different. As has been noted in previous research, the YSP structure creates a perverse system of reverse competition where brokers shop for the best YSP rather than the best loan for borrowers.[34] But, there is likely more to this story. Specifically, the availability of prepayment penalties in the subprime market, the complexity of loan products, and the poorer performance of brokered loans likely contribute to the patterns we observe.

Prepayment Penalties and the Subprime Market

Lenders, and ultimate investors, will pay the maximum yield-spread premium on a loan only if they can be assured of recouping the cost of the YSP either through collecting the excess interest payments over time or through a prepayment penalty. Importantly, prepayment penalties are available on most subprime loan products. As a consequence, brokers are able to secure the highest yield-spread premiums on subprime loans, which encourages them to exploit the vulnerabilities of people with weaker credit profiles.

By contrast, prepayment penalties are seldom available on mortgages in the prime market. Therefore, though lenders still offer yield-spread premiums on prime loans, they are lower than those on subprime products, since lenders have less assurance that they will recoup the cost of the premium. This fundamental difference between the prime and subprime markets—that is, the relative availability of prepayment penalties on subprime products compared to prime products— likely exacerbates any existing tendency to take advantage of subprime borrowers. The far greater incidence of prepayment penalties on brokered loans than on retail loans reported in this paper, particularly among borrowers with the weakest credit profiles, is consistent with this theory.[35]

Complexity of Loan Products

In addition, as our data show, cost differences between brokered loans and retail loans tend to be greater for adjustable-rate mortgages than for fixed-rate mortgages. This suggests that mortgage complexity can make it difficult for borrowers to detect higher costs associated, for example, with higher margins applied to unfamiliar indices some years after closing. Moreover, the differences in introductory rate periods, limits on interest rate adjustments, and other factors make it challenging for borrowers to assess the true cost over a loan's likely lifespan. It is likely that many borrowers rely on initial payments as a proxy for loan costs.[36] However, as we have demonstrated, the additional cost to borrowers of brokered loans at this initial payment amount is much lower than the additional cost over the assumed average four-year life of their loans.

Performance of Brokered Loans

Finally, we note that part of the explanation for higher rates could arguably arise as a consequence of expectations for worse loan performance among brokered loans. In other words, under this explanation, lenders who expect worse loan performance on brokered loans charge higher baseline rates to "price in" the added risk associated with a loan originated by a broker. Alexander et al offer an analysis of subprime loans consistent with this theory, but end up with a net effect of just half a percentage point.[37] Moreover, they do not distinguish whether this increase is associated primarily with increased default risk (which they do detect) or yield spread premiums. Even if the entire amount were attributable to increased default risk, the reported half percentage point difference would be less than half of the 1.3 effective percentage point difference we report here. Moreover, since we control for the vast majority of risk factors, we believe our analysis already directly controls for much of this concern. In addition, to the extent that broker-origination itself is the risk factor that may cause higher delinquencies we question whether the risk factor could be related to the very additional expenses we identify here. In addition, Jackson and Burlingame do explicitly isolate yield spread premiums to identify differences.[38] Consequently, the differences they report between brokered and retail pricing have their origin with the broker and cannot be the result of higher prices built in by a lender to account for anticipated worse loan performance.

Implications

The implications of these findings are important in light of the recent collapse of the subprime mortgage market. Brokers have strong incentives to originate mortgages in large volume and relatively little incentive to scrutinize whether the loans will perform over time. While these incentives might be effectively checked by lenders who hold their mortgages "in portfolio," this is less likely to be the case for lenders that resell loans to subsequent investors. In recent years, lenders who did not hold their mortgages accounted for most subprime originations—the vast majority of these loans were pooled and sold off in the form of mortgage-backed securities (MBS).[39] In fact, as investors bought more and more subprime mortgages, lenders appear to have relaxed lending standards even as the broker share of originations grew. Indeed, this "originate to distribute" model as described by Chairman Bernanke, "appears to have contributed to the breakdown in underwriting standards, as lenders often found themselves able to pass on the credit risk without much resistance from the ultimate investors."[40]

Under this system, we believe that brokers were able to maximize their revenue by disproportionately marketing and underwriting subprime loans based on introductory interest rates that were, in the long run, much more expensive. In doing so, they were exposing their borrowers to greater payment shocks and, consequently, greater risks. In fact, with strong incentives to ignore loan quality and overcharge on subprime loans, brokers evidently either made loans without regard to borrowers' ability to stay in their homes or else relied on borrowers' ability to refinance when their rates reset. In either case, many of these loans were likely unaffordable in the long run and, therefore, unsuitable. As housing prices fell and refinancing became less possible for many borrowers, the risk of foreclosure to borrowers facing rate resets skyrocketed. Since our findings suggest that rate resets were particularly high and/or quick for brokered loans, it stands to reason that borrowers who received such loans have been put in the greatest risk. According to the Mortgage Bankers Association, 5.66% of subprime ARMs entered foreclosure in the 4th Quarter of 2007 versus 1.64% of subprime fixed-rate mortgages.[41]

Until recently in mortgage history, lenders would not approve mortgages for people unless the loans were substantially shown to be affordable and sustainable. In the subprime market in recent years, the rules changed, but borrowers continued to expect lenders to play this gatekeeper role. To the extent borrowers evaluate their ability to repay a mortgage, their judgment often remains focused on the monthly payment. When loans come with a standard amortizing fixed rate, this method is largely acceptable. However, for more complex mortgages with features like adjustable rates or interest only periods, the measure is less helpful and borrowers tend to rely greatly on advice. Combined with their inclination to mistakenly believe brokers are working on their behalf, this can be a recipe for disaster.

In light of the important role of brokers in providing expertise, at least one prominent mortgage researcher has called for a voluntary system where brokers should hold themselves out as borrowers' agents. From all reports, a relatively small number have taken up this challenge.[42] Yet, borrowers who are making the most important economic investment of their lives should be able to trust the very professionals they are paying to help them. While much attention is currently being paid to the systemic risk posed by the recent and potential collapse of major investment houses like Bear Sterns and Lehman Brothers,[43] a perhaps even larger risk is that borrowers will lose faith in the financial system and forego transactions from which they could benefit and that provide important contributions to the larger economy.

VI. CONCLUSION & RECOMMENDATIONS

We find that borrowers who use brokers receive more expensive loans than borrowers with similar risk profiles who receive their loans directly from lenders. We find that borrowers with weaker credit profiles—consistent with subprime status—experience the greatest increased interest cost associated with brokered loans. In addition, we report that stronger credit borrowers—consistent with prime status—receive comparable rates on both broker and lender-originated loans. These results support our hypothesis that brokers will seek to extract greater payments from borrowers who have fewer financing options and who they consider to be more vulnerable. In addition, we have discussed several explanations for how these observed results likely occur, including misaligned incentives presented by yield spread premiums and prepayment penalties, brokers' lack of responsibilities to serve borrowers' interests, and insufficient regulation. Given the prevalence of brokers in today's market and their impact on the ability of borrowers to build and maintain home equity, we propose specific policy recommendations below.

First, yield spread premiums and prepayment penalties should be banned on subprime mortgages. Second, lenders should be more accountable for the actions of mortgage brokers originating loans in their names and investors should share responsibility. Third, mortgage brokers should have a fiduciary responsibility to the borrowers they serve. These recommended policies are described below. Notably, our proposals do not focus on increased disclosures. While improved disclosures and increased financial literacy are laudable goals, the magnitude of the problems identified in this paper indicate the need for a direct and immediate response. Moreover, experience and findings from behavioral economics as well as findings related to limited financial literacy among consumers suggest that improved disclosures are likely to have limited effect, at best.[44]

To the extent that our recommended policies or similar proposals are adopted into federal law, we stress the need to retain the rights of states to take further independent action to protect consumers. The last time Congress passed a significant law related to abusive mortgage lending practices was 1994.[45] During the interim period, the mortgage market has evolved in ways that few could have

predicted, and the majority of states have found it necessary to take action to curb predatory lending practices that were harming homeowners and communities. In fact, research on state laws by CRL and others indicates that state efforts have been successful in saving homeowners millions of dollars while reducing the incidence of predatory lending practices.[46] Had federal preemption of state laws been in effect since 1994, however, these advances and the lessons they hold for policymakers today might never have been realized.

1. Eliminate yield spread premiums and prepayment penalties on subprime loans.

The combination of yield spread premiums and prepayment penalties allows lenders to capture above-market rates and brokers to secure maximum compensation, while locking borrowers into loans that are more expensive than those for which they qualify. In addition, this arrangement perversely encourages brokers to shop for the best yield spread premium rather than the best rate for borrowers. Further, despite claims that prepayment penalties benefit borrowers by lowering their interest rates, our previous research has shown that subprime borrowers who receive loans with prepayment penalties do not, in fact, receive lower interest rates than similarly-situated borrowers without prepayment penalties.[47] In addition, states that have banned or otherwise heavily restricted subprime prepayment penalties have not seen rates increase.[48] As a result, we strongly encourage policymakers to prohibit both yield spread premiums and prepayment penalties on subprime loans.

2. Strengthen accountability of lenders and investors.

Largely insulated from liability under the claim that brokers are acting as independent agents and freed from some level of concern over reputational risk, lenders have originated mortgages through brokers with seemingly little oversight. Moreover, they have quickly passed those mortgages along to investors. Federal Reserve Bank Chairman Ben Bernanke has addressed this concern explicitly:

> A key function of efficient capital markets is to overcome problems of information and incentives in the extension of credit. The traditional model of mortgage markets, based on portfolio lending, solved these problems in a straightforward way: Because banks and thrifts kept the loans they made on their own books, they had strong incentives to underwrite carefully and to invest in gathering information about borrowers and communities. In contrast, when most loans are securitized and originators have little financial or reputational capital at risk, the danger exists that the originators of loans will be less diligent.[49]

Based on these observations and our present findings, we believe lenders should be held accountable for ensuring brokered loans meet reasonable standards. Holding lenders liable for acts, omissions, and representations made by brokers originating loans in the lender's name will ensure that lenders do not turn a blind eye to broker abuses. Second, investors should take reasonable steps to avoid supporting irresponsible lending, including only purchasing mortgages from lenders and brokers who use appropriate underwriting and quality control standards to ensure that loans are affordable to the borrowers they are serving. Policymakers can encourage investors to support responsible lending by including reasonable assignee liability provisions in protections for borrowers.

3. Establish fiduciary responsibilities for brokers.

Investment professionals have long had an affirmative duty to ensure that the products they recommend are appropriate for their clients.[50] However, despite the fact that buying a home is the biggest investment that most families ever make and mortgage transactions are just as or more complicated as those of other investments, mortgage brokers typically have no such obligation to their clients. As a result, while a securities broker who steers a client into an inappropriate investment takes a serious legal risk, a mortgage broker who does the same often reaps higher compensation with no negative consequences.

Brokers should have a fiduciary obligation analogous to that currently in place for investment professionals, as they are dealing with an asset that is more common and more precious: the home. In addition, policymakers should consider options such as establishing a duty of good faith and fair dealing for all originators. Finally, policymakers should consider significantly increasing the bonding requirements for mortgage brokers. Through such a mechanism, policymakers could enlist the help of bonding firms that would have increased incentives to evaluate the risk posed by broker applicants.

In addition, we also make several recommendations to consumers:

- **Obtain multiple quotes before committing to a home loan, with at least some from retail lenders like banks or credit unions. Do not assume that any lender will give you the best or even a good rate.**

- **Ensure that at least one loan option from each lender is a standard fixed-rate mortgage that pays off principal and interest every month.**

- **Examine both interest rate and total fee costs. Ask questions about changes in scheduled payments and how high payments can go.**

- **Avoid loans that have prepayment penalties that can restrict refinancing and support the yield spread premiums that lead to higher interest costs.**

- **Before applying for a loan, review your credit reports and credit score.**

The following excerpt is from Testimony from Martin Eakes, CEO of the Center for Responsible Lending before the Joint Economic Committee of Congress on September 19, 2007:

Yield-spread premiums are a bonus paid by the lender to the mortgage broker as a reward for placing the borrower into a higher cost loan than the borrower qualifies for. Lenders are willing to pay the premium only where they are sure that the borrower will remain in the higher-cost loan long enough to enable the lender to recoup the cost of the premium from the borrower. This is not a theoretical concept; the evidence is clear from examining "rate sheets," information lenders distribute to mortgage brokers showing which loan products the lender is willing to offer at different interest rate levels for borrowers that represent different credit risks. These sheets also indicate the yield-spread premium the lender is willing to pay.

We provide an example of a recent rate sheet (September 2007) [below]. As you can see, the rate sheet shows that the broker collects a 50 basis point (0.50%) yield spread premium (called a "rebate" on this rate sheet) for adding 1% to the borrower s interest rate. The broker collects an additional 75 basis point yield-spread premium for adding an additional 1% to the borrower s interest rate. Thus, with a $200,000 subprime loan, for the broker to receive a 2% yield-spread premium, or $4,000, the borrower pays 1.25% more than she actually qualified for, or $10,000 in excess interest expense if he or she stays in the loan for four years. The broker maximizes his compensation by seeking the lender and the loan that allow for the maximum return to him.

It is important to note that this lender reduces the yield-spread premium if the borrower pays a higher interest rate to "buy out" the prepayment penalty—in many cases lenders do not allow the broker to get any yield-spread premium if the loan has no prepayment penalty. Yield-spread premiums and prepayment penalties are intertwined in a way that is harmful to consumers and detrimental to competition.

Countrywide

NORTH CAROLINA RATE SHEET

FIRST LIENS

Full Doc - 5/25 ARM Pricing

Stated - 5/25 ARM Pricing

ADJUSTMENTS TO RATES

Summer Refi Special

REBATE / DISCOUNT PRICING

Rebate - Max 2 pts, (Max 1 pt if prepay is bought out)

Add 50% to rate for 1st pt, 75% for the 2nd

Discount - max 3 pts

40% off rate for each discount point paid on fixed

50% off rate for each discount point paid on ARM

Maximum Interest Rate
To bring rate into compliance, buy-down pt

Logon to cwbc

Effective: September 5, 2007

APPENDIX 2: SUMMARY STATISTICS

Below are summary tables showing the characteristics of loans in the McDash database, both unweighted and using our geographic, risk, channel and product weights. The summaries include conventional first-lien, owner-occupied 30-year mortgages without balloon payments or mortgage insurance and that contained values for all of our subsetting variables. The total number of observations differs from the total in the cost analysis because the cost analysis dropped categories of loans with fewer than 20 observations in either the broker or the retail channel.

Table A1. Summary Statistics: All Loans

	UNWEIGHTED			WEIGHTED		
	All Loans	All Retail	All Brokered	All Loans	All Retail	All Brokered
Number of Observations	1,670,624	949,191	721,433	3,248,357	2,312,064	936,293
Loan Type						
ARM (%)	46.7	41.2	53.9	40.1	38.1	45.1
FRM (%)	53.3	58.8	46.1	59.9	61.9	54.9
Jumbo(%)	19.7	18.1	21.9	15.2	14.8	16.2
Prepayment Penalty (%)	9.2	1.6	19.2	5.4	0.6	17.3
Loan Purpose						
Purchase(%)	42.7	44.2	40.6	45.8	47.7	41.2
Refinance(%)	57.3	55.8	59.4	54.2	52.3	58.8
Low/No Doc (%)	33.7	27.0	42.4	27.4	23.8	36.4
Negative Amortization (%)	30.3	22.1	41.1	14.8	7.7	32.3
Interest Only (%)	18.2	18.1	18.2	15.9	16.6	14.3
FICO						
Mean	718.6	727.2	707.1	721.5	727.0	707.9
Median	726	735	715	731	736	716
Std	60.7	55.8	64.9	60.2	57.2	65.0
LTV						
Mean	66.9	64.8	69.7	68.7	67.9	70.7
Median	71.9	69.8	75	74.5	73.9	75
Std	16.4	17.4	14.5	15.5	16.0	14.0
DTI						
Mean	33.2	33.0	33.4	32.7	32.6	33.0
Median	31	30	32	29	28	31
Std	17.4	18.0	16.6	18.3	18.9	16.5

Table A2. Summary Statistics: Adjustable-Rate Loans

	UNWEIGHTED			WEIGHTED		
	All ARM Loans	Retail	Brokered	All ARM Loans	Retail	Brokered
Number of Observations	780,106	390,984	389,122	1,303,427	881,171	422,256
Jumbo (%)	32.7	33.2	32.3	28.5	28.8	27.9
Prepayment Penalty (%)	17.4	3.6	31.2	11.3	1.4	31.9
Loan Purpose						
Purchase (%)	42.5	42.7	42.3	45.2	46.6	42.4
Refinance (%)	57.5	57.3	57.7	54.8	53.4	57.6
Low/No Doc (%)	49.3	42.2	56.3	41.0	35.9	51.7
Negative Amortization (%)	64.8	53.5	76.1	36.8	20.2	71.6
Interest Only (%)	38.3	43.8	32.8	39.2	43.4	30.4
FICO						
Mean	712.1	727.4	696.7	715.0	725.0	694.3
Median	719	733	704	724	734	702
Std	61.9	52.9	66.4	63.0	58.0	67.6
LTV						
Mean	69.0	66.0	71.9	70.1	68.9	72.7
Median	74.3	70	75.1	75	74.6	76.6
Std	15.3	16.5	13.3	14.8	15.4	13.1
DTI						
Mean	32.7	32.1	33.3	30.1	28.7	33.1
Median	31	30	32	27	26	32
Std	17.8	17.5	18.0	17.2	16.6	17.9
Initial Rate						
Mean	4.6	4.4	4.9	5.0	4.9	5.0
Median	5.3	5.1	5.4	5.3	5.3	5.4
Std	2.3	1.9	2.6	1.9	1.4	2.6
Initial Period						
‹1 year (%)	33.6	38.1	29.0	22.8	20.5	27.7
1 year (%)	4.0	6.7	1.4	4.9	6.3	1.9
2 years (%)	11.1	0.0	22.2	7.7	0.0	23.8
3 years (%)	5.8	4.0	7.6	7.7	7.2	8.7
5 years (%)	32.1	37.4	26.9	39.9	46.5	26.2
7 years (%)	7.7	8.0	7.4	10.4	12.2	6.6
10 years (%)	4.5	4.7	4.3	5.3	6.1	3.7
Margin						
Mean	2.8	2.4	3.2	2.6	2.4	3.2
Median	2.4	2.3	2.7	2.3	2.3	2.8
Std	1.0	0.4	1.2	0.8	0.3	1.2
Cap (Lifetime Maximum Increase over initial rate)						
Mean	5.7	5.6	5.8	5.6	5.5	6.1
Median	5	5	5	5	5	5
Std	1.7	1.6	1.9	1.5	1.4	2.2

Table A3. Summary Statistics: Fixed-Rate Loans

	UNWEIGHTED			WEIGHTED		
	All fRM Loans	Retail	Brokered	All FRM Loans	Retail	Brokered
Number of Observations	890,518	558,207	332,311	1,944,930	1,430,893	514,037
Jumbo (%)	8.3	7.6	9.6	6.3	6.2	6.6
Prepayment Penalty (%)	2.0	0.1	5.2	1.6	0.2	5.4
Loan Purpose						
Purchase (%)	42.8	45.3	38.7	46.2	48.3	40.3
Refinance (%)	57.2	54.7	61.3	53.8	51.7	59.7
Low/No Doc (%)	20.0	16.3	26.1	18.4	16.4	23.8
Negative Amortization (%)	0	0	0	0	0	0
Interest Only (%)	0.5	0.1	1.2	0.3	0.1	1.0
FICO						
Mean	724.2	727.1	719.3	725.8	728.2	719.0
Median	733	736	728	735	737	727
Std	59.1	57.7	61.0	57.9	56.7	60.5
LTV						
Mean	65.1	63.9	67.2	67.7	67.3	69.0
Median	70	68.6	72.6	73.7	73.4	74.5
Std	17.1	18.0	15.3	15.9	16.4	14.4
DTI						
Mean	33.6	33.7	33.5	34.5	35.0	32.9
Median	31	30	32	30	30	31
Std	17.1	18.3	14.8	18.7	19.8	15.3
Note Rate						
Mean	6.1	6.0	6.1	6.1	6.0	6.1
Median	6	6	6	6	6	6
Std	0.6	0.5	0.8	0.6	0.5	0.8

APPENDIX 3: MATCHED-PAIR METHODOLOGY

This appendix provides additional detail on the subsetting of the loans, the calculation and comparison of interest payments, and the weighting of our observations. In addition, we provide information on several sensitivity analyses that were performed to test the robustness of our findings.

Subsetting Data

Creating categories for year, jumbo status, loan purpose and documentation level was straight-forward, since these variables are all discrete. However, because DTI, LTV and FICO are continuous, they required identifying ranges that are consistent with how loan applications are evaluated for the purpose of determining risk. For DTI, we used 0.36 as one cutoff between categories, as this is a ratio that is conventionally used to define affordability (albeit inclusive of other debt obligations), while we used 0.55 as the other cutoff as this is generally the maximum DTI that many originators will allow. LTV ranges were created based on prevailing ranges on lender rate sheets. Finally, we use 40 point FICO ranges, the narrowest ranges that still allow for the analyses to be conducted on a significant number of subsets. Because our subsets so closely reflect the risk categories that lenders use to price loans, we assume that loans within a given subset should be priced equally between the two channels. If not, then the difference on the average cost of the loans should indicate a pricing discrepancy between lending channels that are unrelated to the objective pricing factors we observe.

Adjustment to Interest Payments

We account for the increase in interest rates that lenders often charge for loans on condominiums. Specifically, we subtract 25 basis points from the interest rates of loans on condominiums. These basis point adjustments allows loans secured by condominiums and single-family dwellings, to be fairly compared.

To control the effect of economic conditions at the time of closing on the pricing of a loan, for each loan, a total interest payment was calculated based on the average rate for first-lien prime 30-year, fixed-rate conventional conforming home mortgage commitments for the week of the loan's closing as surveyed by Freddie Mac s Primary Mortgage Market Survey. The total interest payment based on this average rate was then subtracted from the loan's actual total interest payment (adjusted for the existence of a prepayment penalty). We call this difference between the actual interest payment and the interest payment based on the average rate for that week the "time neutral" interest payment. We normalize this by the size of the loan. Within each match group, we then compare the weighted-average time neutral interest payment per $100,000 in loan amount between the two channels (i.e. retail vs. broker).

Weighting Observations for Risk and Product Type

To be included in our analysis, loans had to have complete information along each of our subsetting dimensions. While we had almost all of the needed information for 3.1 million loans, there were relatively large numbers of missing values for documentation level and/or DTI. As a result, our analytic dataset dropped in size from 3.1 million to 1.7 million observations. Therefore, we weight our data to rebalance this smaller dataset to reflect the risk- and product-distribution of the larger sample. Specifically, we weight each loan to reflect the annual FICO, LTV, jumbo status, rate type, property type, and loan purpose distributions of the larger dataset. We also weight the data to reflect the distribution of loans that allow for negative amortization in the larger dataset.

Weighting Observations for Geographic Distribution

To account for differences between the geographic distribution of loans in our sample with that of the mortgage market as a whole, we apply weights to loans when calculating the average costs within each loan category. Specifically, we use 2004, 2005 and 2006 HMDA data to determine the distributions of loans across states in these years. Based on these actual distributions, we assign weights to loans in our sample to correct for any over-representation or under-representation of states in our sample and apply these weights when calculating the average total interest payments for brokered and retail loans within each loan category.

Mathematical Treatment of Methodology

Let $i \in \{1,\ldots N\}$ be the ith loan of total of N loans in our dataset which have complete information on the first 9 variables as shown in Table A4. For loan i,

$$A_i = \begin{cases} \text{note rate, if i is an FRM secured on a single family house} \\ \text{note rate} - 0.25, \text{ if it is an FRM secured on a condominium} \\ \text{initial rate, if it is an ARM secured on a single family house} \\ \text{initial rate} - 0.25, \text{ if it is an ARM secured on a condominium} \end{cases} \quad (1)$$

A_i is then adjusted to monthly interest rate that is expressed as a fraction.

Let B_i be the loan amount; C_i be the full term of the loan, which equals to 360 month for all the loans in our dataset; D_i be the realized term of the loan, which is specified in our analysis as 12, 48 or 360 months. If i is an FRM, then the total payments during the realized term is given by

$$E_i = D_i \times \frac{B_i \times A_i \times (1 + A_i)^{C_i}}{(1 + A_i)^{C_i} - 1} \quad (2)$$

If i is a non-IO ARM loan, let X_i be the margin of the loan; Y_i be the index rate at the week of closing; and Z_i be the initial fixed period of the initial rate. If $D_i \leq Z_i$, then the total payments during the realized term is given by

$$E_i = D_i \times \frac{B_i \times A_i \times (1 + A_i)^{C_i}}{(1 + A_i)^{C_i} - 1} \quad (3)$$

If $D_i > Z_i$, then the total payments during the realized term is given by

$$E_i = Z_i \times \frac{B_i \times A_i \times (1 + A_i)^{C_i}}{(1 + A_i)^{C_i} - 1} + (D_i - Z_i) \times \frac{B'_i \times (X_i + Y_i) \times (1 + X_i + Y_i)^{(C_i - Z_i)}}{(1 + X_i + Y_i)^{(C_i - Z_i)} - 1} \quad (4)$$

Where B'_i is the principal balance after the initial fixed period expired.

If i is an IO ARM loan, if $D_i \leq Z_i$, then the total payments during the realized term is given by

$$E_i = D_i \times A_i \times B_i \quad (5)$$

If $D_i > Z_i$, then the total payments during the realized term is given by

$$E_i = Z_i \times A_i \times B_i + (D_i - Z_i) \times \frac{B_i \times (X_i + Y_i) \times (1 + X_i + Y_i)^{(C_i - Z_i)}}{(1 + X_i + Y_i)^{(C_i - Z_i)} - 1} \quad (6)$$

Let F_i be the average rate for first-lien prime 30-year, fixed-rate conventional conforming home mortgage commitments for the week of the loan's closing as survey by Freddie Mac's Primary Mortgage Market Survey. Then the realized total payment assuming a rate of F_i is given by

$$G_i = D_i \times \frac{B_i \times F_i \times \left(1 + F_i\right)^{C_i}}{\left(1 + F_i\right)^{C_i} - 1} \quad (7).$$

Then the time-neutral total interest payment during the realized term for loan i is given by

$$H_i = E_i - G_i \quad (8).$$

Loan i may have the following features by taking a set of category indices for variables as defined in
Table A4.

Table A4. Category indices for the matching and weighting variables.

Variable	Category Index
Year	$a \in [1,\ldots,3]$
Jumbo Status	$b \in [1,2]$
Loan Purpose	$c \in [1,2]$
Loan Type	$d \in [1,2]$
Loan-to-Value Ratio	$e \in [1,\ldots,4]$
FICO score	$f \in [1,\ldots,7]$
Negative Amortization	$g \in [1,2]$
Property Type	$h \in [1,2]$
Origination Channel	$l \in [1,2]$
Documentation	$m \in [1,2]$
Debt-to-Income Ratio	$n \in [1,\ldots,3]$

Let $I_{i,a,b,c,d,e,f,g,h,l}$ be an indicator variable defined by

$$I_{i,a,b,c,d,e,f,g,h,l} = \begin{cases} 1, & \text{if loan i has those features on the first 9 variables} \\ 0, & \text{else} \end{cases} \quad (9)$$

Let $I_{i,a,b,c,d,e,f,g,h,l,m,n}$ be an indicator variable defined by

$$I_{i,a,b,c,d,e,f,g,h,l,m,n} = \begin{cases} 1, & \text{if loan i has those features on all 11 variables} \\ 0, & \text{else} \end{cases} \quad (10)$$

Then the total number of loans in our dataset having features defined by Table A4 on just the first 9 variables is given by

$$N_{a,b,c,d,e,f,g,h,l} = \sum_{i=1}^{N} I_{i,a,b,c,d,e,f,g,h,l} \quad (11)$$

And the total number of loans in our dataset having features defined by Table A4 on all 11 variables is given by

$$N_{a,b,c,d,e,f,g,h,l,m,n} = \sum_{i=1}^{N} I_{i,a,b,c,d,e,f,g,h,l,m,n} \quad (12)$$

Since there are missing values on documentation and DTI, so

$$N_{a,b,c,d,e,f,g,h,l} \geq N_{a,b,c,d,e,f,g,h,l,m,n}. \quad (13)$$

Call the set of loans that have no missing values on documentation and DTI "$DATA_1$", which is the dataset on which we performed our final analysis, and the set of loans have missing values on documentation and DTI "$DATA_2$". Then a weighting factor for loan i in $DATA_1$ can be calculated to reflect the distribution of $DATA_2$:

$$W_{i,1} = \frac{N_{a,b,c,d,e,f,g,h,l}}{N_{a,b,c,d,e,f,g,h,l,m,n}} \quad (14)$$

Let $s \in [1,\ldots,51]$ be an index for state variable. Let

$$I_{i,a,s} = \begin{cases} 1, \text{if loan I originated from state s on year a} \\ 0, \text{ not from state s but on year a} \end{cases} \quad (15)$$

Then the total number of loans originated from state s on year a is given by

$$N_{a,s} = \sum_{i=1}^{N} I_{i,a,s} \quad (16)$$

Similarly, for a 1st lien, owner-occupied, conventional purchase and refinance mortgage in HMDA data, let

$$I_{HMDA,j,a,s} = \begin{cases} 1, \text{if loan j originated from state s on year a} \\ 0, \text{ not from state s but originated on year a} \end{cases} \quad (17)$$

Then the total number of HMDA loans originated from state s on year a is given by

$$N_{HMDA,a,s} = \sum_{j=1}^{M} I_{j,a,s}, \quad (18)$$

Where M is the total number of 1st lien, owner-occupied, conventional purchase and refinance mortgage in HMDA dataset.

Then a weighting factor for loan i in our sample can be calculated to reflect the distribution of HMDA on state market shares:

$$W_{i,2} = \frac{N_{HMDA,a,s}}{N_{a,s}} \quad (19)$$

Then the time-neutral weighted average interest payment during the realized term for loans having features of a, b, c, d, e, f, h, m and n and originated by broker is given by

$$Q_{Broker,a,b,c,d,e,f,h,m,n} = \sum_{i=1}^{N} I_{Broker,a,b,c,d,e,f,h,m,n} \times H_i \times W_{i,1} \times W_{i,2} \quad (20)$$

Similarly, the time-neutral weighted average interest payment during the realized term for loans having features of a, b, c, d, e, f, h, m and n and originated through a retail channel is given by

$$Q_{Retail,a,b,c,d,e,f,h,m,n} = \sum_{i=1}^{N} I_{Retail,a,b,c,d,e,f,h,m,n} \times H_i \times W_{i,1} \times W_{i,2} \quad (21)$$

And the average weighted additional interest paid for loans with features as described above originated by a broker versus a retail channel is given by

$$\Delta Q_{a,b,c,d,e,f,h,m,n} = Q_{Broker,a,b,c,d,e,f,h,m,n} - Q_{Retail,a,b,c,d,e,f,h,m,n} \quad (22)$$

To aggregate into higher level measurements, the lower level measurement are weighted by their market share, for example, the average additional broker interest cost weighted by market share for loans originated on 2004 as shown in Table 4, was calculated by

$$\Delta Q_{2004} = \frac{\sum\limits_{b,c,d,e,f,h,m,n} V_{2004,b,c,d,e,f,h,m,n} \times \Delta Q_{2004,b,c,d,e,f,h,m,n}}{\sum\limits_{b,c,d,e,f,h,m,n} V_{2004,b,c,d,e,f,h,m,n}} \quad (23)$$

Where $V_{2004,b,c,d,e,f,h,m,n}$ is the market volume for loans originated on 2004 with features defined by b, c, d, e, f, h, m and n, which is given by

$$V_{2004,b,c,d,e,f,h,m,n} = \sum_{i=1}^{N} I_{i,2004,b,c,d,e,f,h,m,n} \times B_i \quad (24)$$

To test whether a ΔQ is significantly different from zero or not, we performed a T-test for the paired differences:

$$t = \frac{\sqrt{n} \times \Delta Q}{s_d} \quad (25),$$

Where n is the total number of paired differences below the summary level and s_d is the sample standard error of the paired differences.

APPENDIX 4: ADJUSTING FOR PREPAYMENT PENALTIES

In our analysis, we do not adjust the interest rates of loans that contain prepayment penalties, even though these penalties constitute a real cost to borrowers and are much more prevalent on brokered loans. Recognizing that lenders assign different "values" to prepayment penalties, as is evidenced by differences in how prepayment penalties are treated in rate sheets, we opted not to adjust interest rates, knowing this would likely lead to conservative estimates of the true costs of brokered loans.

As a way to test this, we tried adjusting the interest rates of loans with prepayment penalties. Specifically, for loans with prepayment penalty terms of 1 to 24 months, an extra 50 basis points was added to the note rate. For loans with prepayment penalty terms of 24 to 35 months and of 36 or greater months, an additional 75 and 100 basis points were added, respectively. These amounts were chosen by reference to rate sheets commonly used by the lenders most likely to offer loans with prepayment penalties. We then ran the analysis for 1-year, 4-years and 30-years.

These results are available on request. They confirm that, by not adjusting for prepayment penalties, our main analysis understates the true cost of brokered loans. As a result, the actual additional interest payments incurred by borrowers with brokered loans compared to similar borrowers with retail loans is actually higher than those presented in this paper.

To test the robustness of our results, we performed several sensitivity analyses. First, we tried running our model *without* weighting the data to reflect the risk- and product-distributions of our larger dataset (though we continued to weight to reflect the geographic distribution of HMDA data). In addition, we tried modifying the FICO ranges used to categorize loans and the indices assigned to adjustable-rate mortgages. Finally, we ran an analysis that included low-margin adjustable-rate loans. Importantly, none of these sensitivity analyses altered the basic finding of our paper. The general pattern of brokered loans being more expensive, particularly for subprime borrowers, was consistent across sensitivity analyses. These modifications are described in greater detail, below.

1) Removing loan-level weights: In our primary analysis, we weight the loans to reflect the risk, channel and product distributions of the 3.1 million loans that contain all of the information that we need to conduct our analysis, except for documentation level and DTI.

2) FICO Ranges: Our analysis groups loans into small categories of similarly-risky loans based, in part, on FICO scores. Specifically, we use 40 point FICO ranges in the categorization of loans. In case our brokered loans tended to have lower FICO scores *within* each category, we tried shifting our FICO boundaries upward by 20 points. This would, in essence, address any potential bias of FICO within 40-point ranges somehow being correlated with broker.

3) Indices: Finally we test whether our model is sensitive to differences in how we assign indices to adjustable-rate loans. In our model, for ARM loans that do not specify which index they use, we assume they use the 6-month LIBOR. However, though we have no evidence of this, it is possible that brokered and retail loans have different likelihoods of being tied to specific indices. Therefore, we tried two variations. In the first, we assume that those brokered loans that do not specify an index are tied to the 6-month LIBOR, while the retail loans that do not specify an index are tied to the Treasury. In the second, we do the reverse.

4) Low-Margin ARMs: 36,663 adjustable rate mortgages were listed as having margins of less than 200 basis points and of being indexed to LIBOR or U.S. Treasuries. Based on an exploration of Fannie Mae and Freddie Mac ARM products, subprime ARM products, and and secondary, we determined that loans with such low margins are likely to be tied to the prime rate and not to either of these indices.† We therefore assume that either the margin or the index is incorrectly coded for these loans and exclude them from our main analysis. However, in the unlikely event that this data was not miscoded, we did try running the basic analyses with these loans included.

1 *Understanding the Home Buying Process,* p. 29, New Jersey Housing and Mortgage Finance Agency. Available at www.state.nj.us/dca/hmfa/home/pub/hbp_brochure.pdf.

2 For example, states have increased enforcement activities against "net branching," a practice that has been used by some mortgage brokers to try to avoid direct state regulation. *See e.g.,* Michelle Singletary, "Some Mortgage Originators Skip Licensing," Washington Post (September 9, 2007) (http://www.washingtonpost.com/wp-dyn/content/article/2007/09/08/AR2007090800159_pf.html). In addition, according to data from the Mortgage Asset Research Institute, state enforcement actions rose from 2,400 in 2005 to 3,694 in 2006.

3 *Subprime Originations Fall Modestly in 2006, Worse to Come,* p. 3 Inside B&C Lending (February 9, 2007).

4 *Retail Share of Subprime Originations Jumps in 1Q07,* p. 4 Inside B&C Lending (June 15, 2007) and *Subprime Lenders to Face Increased Legislation,* p. 4, Inside B&C Lending (February 29, 2007).

5 William Apgar, Amal Bendimerad and Ren S. Essene, *Mortgage Market Channels and Fair Lending: An analysis of HMDA Data,* p. 7-8, Joint Center for Housing, Harvard University (April 25, 2007).

6 Associated Press, *Wells Fargo to Limit Subprime Lending,* The New York Times (July 27, 2007) available at http://www.nytimes.com/2007/07/27/business/27fargo.html; *Wholesale Share of Originations Falling Quickly,* Inside B&C Lending (September 7, 2007); *Aegis Abandons Originations,* MortgageDaily.com (August 8, 2007).

7 Ren S. Essene and William Apgar. *Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans.* Joint Center for Housing Studies. Harvard University (April 2007). Available at www.jchs.harvard.edu/publications/finance/mm07-1_mortgage_market_behavior.pdf.

8 Kellie K. Kim-Sung and Sharon Hermanson, *Experiences of Older Refinance Mortgage Loan Borrowers: Broker- and Lender-Originated Loans,* p. 2, AARP Public Policy Institute, Daily Digest Number 83, (January 2003).

9 Ibid, p. 3.

10 Ibid, p. 4.

11 Delivery requirements for lenders selling directly to Fannie Mae and Freddie Mac include minimum net worth requirements, errors & omissions insurance and fidelity bond insurance. *Becoming a Fannie Mae Customer,* http://www.efanniemae.com and *Become a Freddie Mac Customer,* http://www.freddiemac.com.

12 *See* Mortgage Lending Act, Chapter 53, Article 19A of the North Carolina General Statutes.

13 Ibid and see also, James Haggerty, "Mortgage Brokers: Friend of Foe" Yahoo Finance (May 30, 2007) (discussing mortgage broker duries generally and the evolution of fiduciary duties for brokers in California (http://finance.yahoo.com/loans/article/103075/Mortage-Brokers-Friends-or-Foes).

14 See Kim-Sung et al, note 8.

15 *The Growing Demand for Housing,* 2002 Fannie Mae National Housing Survey, p. 9.

16 Stacy Kaper, *First Predator Hearing Has Few Clues on Legislation,* p. 1 American Banker (February 8, 2007); *Group Changes Website After Senator's Comment on Role: 'You Can't Have It Both Ways.',* p. 61 Origination News (March 1, 2007).

17 Jack Guttentag, *Another View of Predatory Lending,* Financial Institutions Center, The Wharton School, University of Pennsylvania (2000) available at http://fic.wharton.upenn.edu/fic/papers/01/0123.pdf.

18 See http://www.mcdash.com for more information. Our dataset was drawn from all originations reported through the July 2007 version of this data set.

19 36,663 adjustable-rate mortgages were listed as having margins less than or equal to 200 basis points and being indexed to the LIBOR or Treasury. Because these were likely the result of data errors, they were omitted from the analysis. See Appendix 5 for more information.

20 For the index associated with a loan, as applicable, we used the rate at closing of the 6-month U.S. Dollar LIBOR or the weekly average yield on one-year Treasury notes adjuststed to a constant maturity as reported by the Federal Reserve Board in statistical release H.15. Our data set does contain an index variable, but it is not uniformly populated. For the 281,923 loans that did not specify which index was used, we used the 6-month U.S. Dollar LIBOR. Please see Appendix on sensitivity analyses for more on this point.

21 E. Scott Reckard, *Mortgage Meltdown: Prime loans seeing rise in defaults; Delinquencies among holders of risky option ARMs are increasing as their minimum payments climb,* p. C-1 Los Angeles Times (December 28, 2007).

22 A set of weights is used to rebalance the data to reflect the estimated risk-, channel-, product- and geographic- distributions present in the market. See Appendix 3 for more information on how we weighted loans.

23 To be included in the analysis, categories of loans must have had at least 20 retail loans and at least 20 brokered loans.

24 The results from each risk/product category are weighted by the market share of that risk/product category estimated from McDash, and by geographic distribution as estimated from HMDA data. See Appendix 3 for more information.

25 Coincidentally, we note that this 720 cut point is very close to the national median FICO score of 723 reported on myfico.com and the median FICO of 731 in our analytic dataset.

26 Ira Carnahan, *Investment Guide: Mortgage Tricks,* Forbes.com (June 9, 2003) available at http://www.forbes.com/forbes/2003/0609/126.html.

27 We limit the figure to ARMs because differences in interest payments over time is much more pronounced for adjustable rate mortgages.

28 Howell E. Jackson and Laurie Burlingame, *Kickbacks or Compensation: The Case of Yield Spread Premiums,* v12 Stanford Journal of Law, Business, and Finance at Table 6 (Spring 2007).

29 Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, *Higher-Priced Home Lending and the 2005 HMDA Data,* Federal Reserve Bulletin, A157-A158 (September 8, 2006).

30 See Jackson et al p. 357, note 28.

31 William P. Alexander, Scott D. Grimshaw, Grant R. McQueen, and Barrett A. Slade, *Some Loans are More Equal than Others: Third-Party Originations and Defaults in the Subprime Mortgage Industry,* v30, n4, Real Estate Economics, p. 687-697 (2002).

32 Amany El Anshasy, Gregory Elliehausen, and Yoshiaki Shimazaki , *The Pricing of Subprime Mortgages by Mortgage Brokers and Lenders,* presented at *Promises & Pitfalls: As Consumer Finance Options Multiply, Who Is Being Served and at What Cost?,* A Federal Reserve System Community Affairs Research Conference, Washington, D.C., April 7-8, 2005, available at http://www.chicagofed.org/cedric/promises_pit-falls_2005_conference.cfm.

33 Elliehausen, Staten, and Steinbuks. Page 15 of unpublished manuscript. Statistics also cited in remarks by Mike Calhoun at Fed Conference, p.6 (March 2007) available at http://www.responsiblelending.org/pdfs/remarks-of-michael-calhoun-crl-03-29-2007.pdf.

34 See Jackson et al, note 28.

35 The increased cost associated with loans that carry YSPs and prepayment penalties are hard for borrowers to observe for several reasons. First, the YSP and prepayment penalty have some limited offsetting value. Borrowers with loans that carry prepayment penalties are generally credited on rate sheets with a discount in interest rate ranging from 0.5% to 1.0%. However, when a YSP is applied, it can easily offset these "savings." Then, borrowers face the unpleasant prospect of being locked in a loan or paying a high penalty to refinance. Given the opacity of the lending process, we postulate that many borrowers have unknowingly paid thousands of dollars each in prepayment penalty fees while refinancing to avoid upcoming rate resets.

36 Governor Susan Schmidt Bies, *Economic Outlook and Developments in Mortgage Markets,* Speech at the Eller College of Management Distinguished Speaker Series, Tucson, Arizona (January 18, 2007).

37 See Alexander et al, note 31.

38 See Jackson and Burlingame, note 28.

39 76% of 2006 subprime loans were securitized into MBS. *Subprime MBS Issuance Bounces Back in Fourth Quarter of 2006.* p.1. Inside B&C Lending. (January 12, 2007).

40 *Fostering Sustainable Homeownership,* Speech by Federal Reserve Chairman Ben Bernanke at National Community Reinvestment Coalition Annual Meeting (March 14, 2008) available at http://www.federalreserve.gov/newsevents/speech/bernanke20080314a.htm. See also, Kathleen C. Engel and Patricia A. McCoy. *Turning a Blind Eye: Wall Street Finance of Predatory Lending,* Fordahm Law Review, (March 2007).

41 *National Delinquency Survey. Q407,* Mortgage Bankers Association.

42 Jack Guttentag, *Should Mortgage Brokers be Required to Be Agents?* (July 16, 2007). Available at http://www.mtgprofessor.com/public_policy_issues.htm.

43 Patrice Hill, *Bernanke sees 'recession' signs; Fed chairman defends rescue of Bear Stearns,* p. A1 The Washington Times (April 3, 2008)). Available at http://www.washingtontimes.com/article/20080403/BUSINESS/26739907.

44 Patricia A. McCoy, *Rethinking Disclosure in a World of Risk-Based Pricing,* Harvard Journal on Legislation, Vol. 44, (2007) and United States General Accounting Office Report to the Chairman and Ranking Minority Member, Special Committee on Aging, U.S. Senate *Consumer Protection: Federal and State Agencies Face Challenges in Combating Predatory Lending,* (January 2004). Available at www.gao.gov/new.items/d04280.pdf.

45 In 1994 the Congress enacted the Home Ownership and Equity Protection Act (HOEPA), Pub. L. 103-325, 108 Stat. 2160, as an amendment to the Truth in Lending Act (TILA), 15 U.S.C. 1601 et seq. HOEPA identifies a class of high-cost mortgage loans through rate and fee triggers, and it provides consumers entering into these transactions with special protections. HOEPA applies to closed-end home-equity loans (excluding home-purchase loans) bearing rates or fees above a specified percentage or amount.

46 See, e.g., Wei Li and Keith S. Ernst, *Do State Predatory Lending Laws Work? A Panel Analysis of Market Reforms*. Housing Policy Debate. Volume 18. Issue 2. Page 347-392 (2007) (http://www.mi.vt.edu/data/files/hpd%2018.2/6.hpd_wei-ernst_web.pdf).

47 Keith Ernst. *Borrowers Gain No Interest Rate Benefits from Prepayment Penalties on Subprime Mortgages*. Center for Responsible Lending, (January 2005). Available at http://www.responsiblelending.org/issues/mortgage/research/page.jsp?itemID=28012342.

48 See Li and Ernst, note 46; See also, Raphael W. Bostic, Kathleen C. Engel, Patricia A. McCoy, Anthony Pennington-Cross, and Susan M. Wachter, *State and Local Anti-Predatory Lending Laws: The Effect of Legal Enforcement Mechanisms* (August 7, 2007) (http://ssrn.com/abstract=1005423).

49 *Housing, Housing Finance, and Monetary Policy*. Remarks by Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System. Federal Reserve Bank of Kansas City's Economic Symposium, Jackson Hole, WY. August 31st, 2007.

50 Kathleen C. Engel, and Patricia A. McCoy, *A Tale of Three Markets: The Law and Economics of Predatory Lending,* Texas Law Review 80(6): 1255, (May 2002).