

Executive Summary

Abstract

The purpose of this study is to provide the most accurate estimate of historical price elasticity. Heitman Analytics will limit the scope of this study to the Retail Texas mortgage market highlighting 30 Year Fixed conforming products. The data utilized in this report ranges from January 1st 2010 to November 1st 2010. Volume data comes directly from lenders constituting a 60% sample size of the market. This study only reflects Locked loans; as funded loans are highly subjective to the individual lender.

Heitman Analytics Conclusions:

- I. A 1.0% proportional change in rate was observed to cause a 3.13% proportional change in volume for Texas
- II. Increasing elasticity is observed from overall market stabilization of rates
- III. Texas housing market remains relatively stagnant but shows growth potential from increasing affordability of homes
- IV. Record low rates has caused a market wide increase in refinance products
- V. Consumer credit approval remains tight averaging 740+ FICO
- VI. Refinanced mortgage control the Texas market, showing the greatest sensitivity to mortgage rates
- VII. Average LTV observed 65.3% resembling refinance products driven by low rate demand, not distressed mortgages
- VIII. Purchase product demand shows inelasticity toward rate movements

Texas Retail	
Lender	Market Share
Lender 1	28.65%
Lender 2	15.65%
Lender 3	7.55%
Lender 4	6.52%
Lender 5	4.55%
Lender 6	3.95%
Lender 7	1.68%
Lender 8	1.15%
Lender 9	0.65%
Lender 10	0.50%

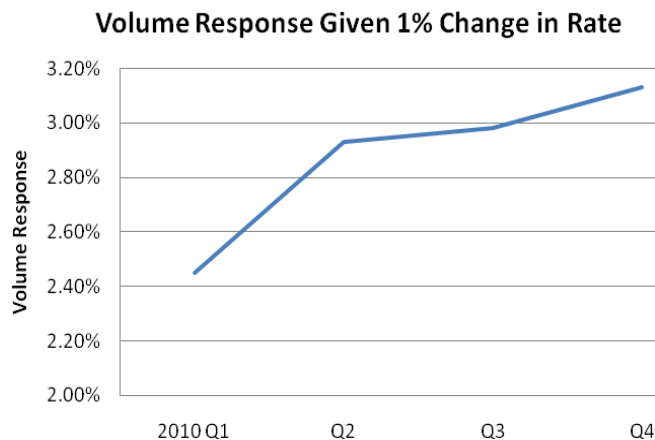


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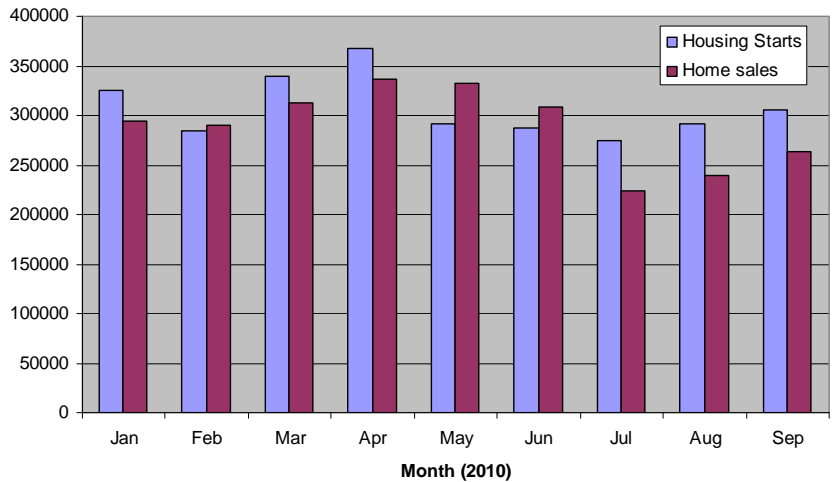
Market Conditions

The “Market” is defined as the state of Texas. We will be limiting our analysis to the Retail mortgage channel favoring tier 1 and tier 2 lending institutions. To better understand the isolated effect of mortgage rates on volume several other macro economic variables must be considered. Heitman Analytics has organized exogenous variables into three categories: Housing, Products, and Competitive Environment. These categories are all capable of creating bias within our results and must be considered when moving forward.

Housing Statistics

The Texas housing market remains in a state of recovery and has shown little progress improving throughout 2010. Housing starts and home sales remain highly correlated but do not show significant movement of improving. Starts have outpaced sales; adding to the excess housing stock on the market. This excess supply of available homes continues to keep home prices low. Average home prices show a modest increase from \$140,500 to \$150,100. This 7% increase is not viewed as stable moving forward, which causes ambiguity in purchaser’s decisions. Wages and income gains have outpaced home prices resulting in a relative increase in the affordability of homes. Unfortunately, affordability has yet to translate into sales or upstarts.

2010 Housing Starts and Sales



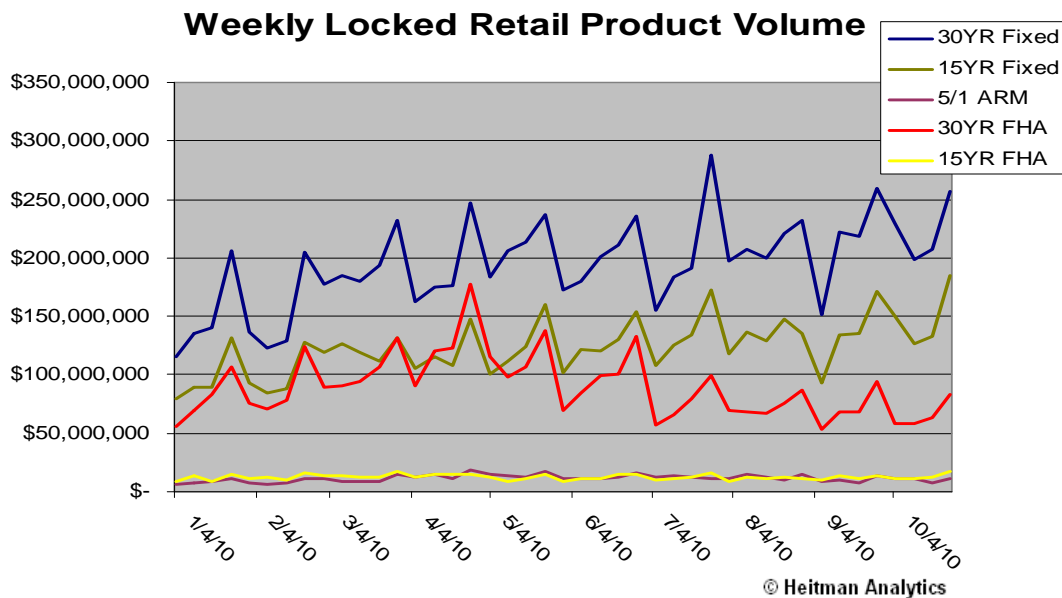
Data Source: National Association of Home Builders

Monthly Southern Housing Statistics - Not seasonally Adjusted						
Month (2010)	Housing Starts	Home sales	Unemployment	Total Unemployed	Home Affordability Index	Average home Prices
Jan	326000	295000	8.20%	997099	116.7	\$ 140,500.00
Feb	285000	290000	8.20%	1000352	116.8	\$ 143,800.00
Mar	339000	313000	8.20%	1002567	116.7	\$ 147,300.00
Apr	367000	337000	8.30%	1008650	116.9	\$ 151,900.00
May	291000	332000	8.30%	1008884	117.1	\$ 156,500.00
Jun	287000	308000	8.20%	998979	117.6	\$ 158,600.00
Jul	275000	224000	8.20%	999210	117.5	\$ 155,600.00
Aug	291000	240000	8.30%	1004286	117.9	\$ 152,700.00
Sep	305000	264000	8.10%	987151	118.2	\$ 150,100.00

Data Source: National Association of Home Builders

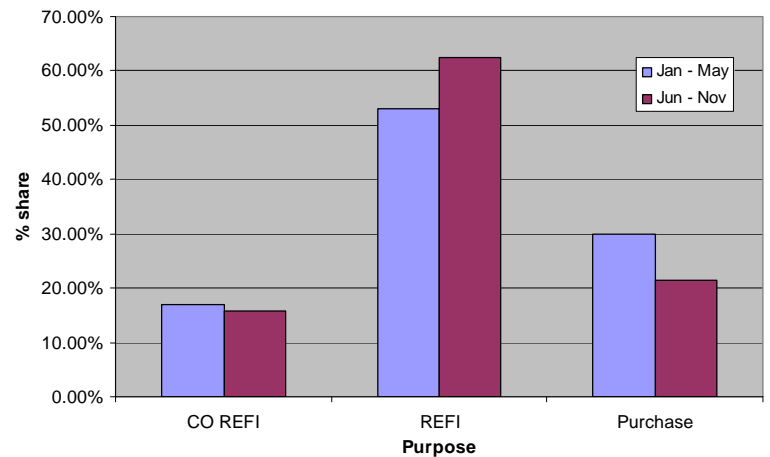
Mortgage Product Composition

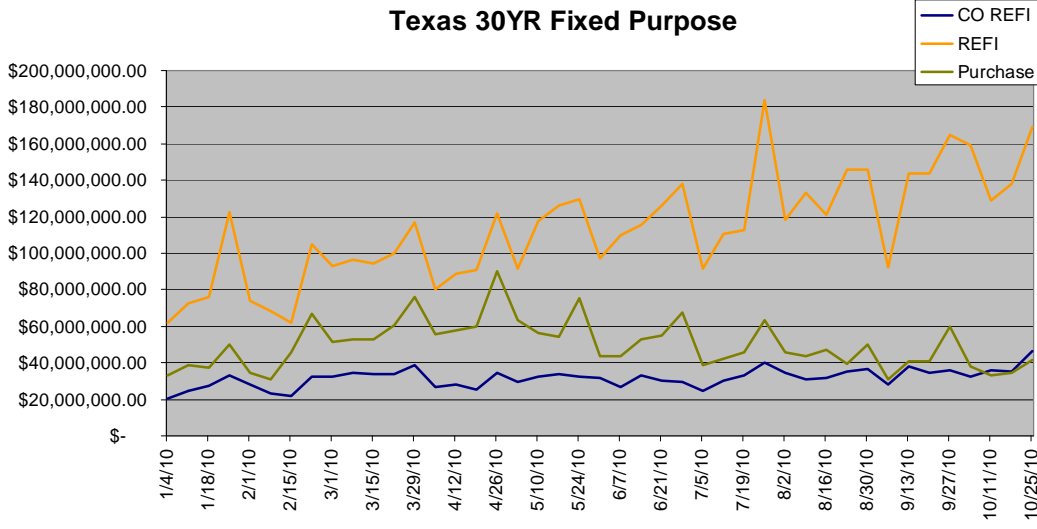
For the purposes of this study, we have confined our final analysis to retail 30 year fixed conforming products. To obtain the most accurate analysis, we must also look at the dynamics and characteristics of other major products. Additional products examined include: 15YR fixed, 5/1 ARM, 30YR FHA, and 15YR FHA. These products incorporate an even wider array of products disclosed by many lenders within our dataset. However, in order to build a robust sample and promote consistency, similar products and nomenclature have been combined internally. The three most popular products in the Texas remain 30 Year Fixed, 15 Year Fixed and 30 Year FHA. These products continue to exhibit high positive correlation to one another and have yet to show signs of product cannibalization.



Rates have remained low throughout 2010. This has incentivized borrowers to refinance existing loans at the record lows the market is currently experiencing. The wave of refinances caused an upward push in volume of shorter term fixed products. This increased movement and demand for short term refinance products will have a negative effect on the demand for 30 year fixed mortgages. Elasticity will be compared and reported for 30 year fixed products with loan purpose both combined and separated. Refinanced mortgages exhibit increased volatility throughout 2010 when compared to purchase products. This comes from consumer rate anticipation. When a relative negative spike in rate is observed by consumers a spike in locks follows. As rates remain low, refinance mortgages are expected to continue to dominate the market. Texas has seen an increase in refinances to accumulate over 60% of locked loans. However, a refinance bubble may be developing if this trend is continued. Sustained low rates exhibited in the current market may be cannibalizing future demand for refinance products. The stock of refinance borrowers may not be able to sustain volume for extended periods of time, given current market conditions.

30YR Fixed Product Purpose Makeup





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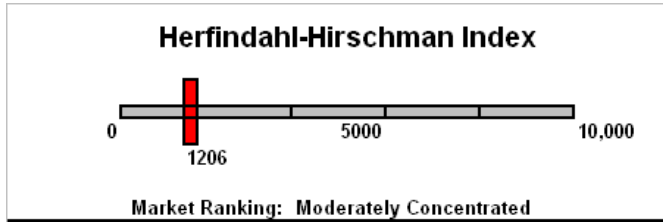
To ensure consistent results Heitman Analytics also considers any major changes in credit worthiness, loan amount or LTV statistics. Over the course of 2010 approved FICO, LTV and Loan amounts remained flat and consistent. When analyzing the 30YR Fixed Conforming product no major adjustments will need to be taken to remove data bias. The low average LTV and high Fico resemble primarily refinanced loans. This is consistent with demand not coming from distressed mortgages, but from borrowers seeking preferential rates.

Additional Loan Characteristics		
Item	Average	Std. Dev.
FICO	745.9	18.457
LTV	65.30%	5.26%
Loan Amount	\$ 186,000.00	\$ 21,156.00

Competitive Environment

From the recent consolidation of loan originators, the Texas retail market has become increasingly concentrated. In addition, many lenders are leaving channels and specific product lines which specializes market power. Over 58% of observed retail volume is generated by only four lenders. These four lenders exhibit relatively less elastic rate response than smaller lenders. The relative inelasticity is derived from large market presence, consumer awareness and large existing client base. Many existing mortgages are held by these large institutions, which once refinanced the loan stays within the lender increasing volume.

Texas Retail	
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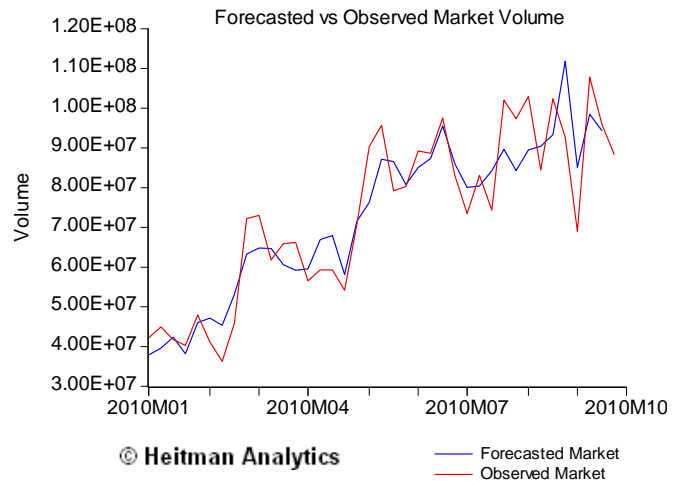


Heitman Modeling Analysis

Heitman Analytics used a weighted average of several elasticity models to determine both market and lender volume sensitivity towards rate movements. Multiple multivariate linear and non-linear regressions were considered when constructing a robust analysis. The final analysis was ultimately built on historical data; while relationships may vary in the future distorting results.

Process and Rationale

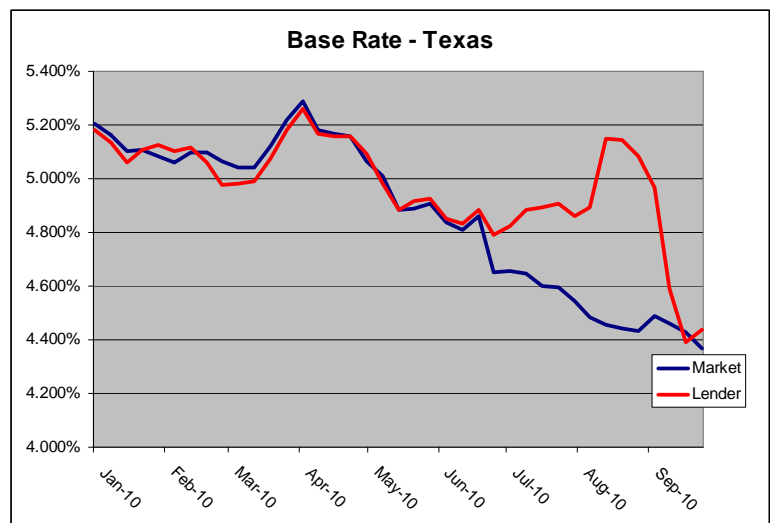
Heitman Analytics first created a point of reference to determine a fair market rate. Since mortgages are generally quoted with varying note rates and lenders choose to compete on several different rates, bias can arise from separate pricing strategies. Heitman has constructed an internal index (HANI) which normalizes individual lenders rate to a specified point quote. For the purposes of this study, all lenders' rate quotes were normalized to a 0-point price. These rate values we built daily, and then averaged over a given week. Several rate indexes are used: Total Market HANI, Lender HANI and Market HANI (less said lender).



Once pricing rates have been established, volume figures were compiled. Limiting the study's scope to Texas Retail 30 Year Fixed Conforming Locked mortgages aided in providing accurate results. However, loan purpose qualification created significant variance in results. Ultimately mortgage volume had to be separated into two categories: Refinance and Purchase. These series behave differently and are driven by unique forces in the current market. Refinances respond more significantly to changes in rate and constitute the majority of market volume. Most of these refinances are made for rate adjustments and not for distressed mortgages, as seen in average quoted LTV. The purchase market is driven primarily by exogenous macroeconomic factors, showing little influence from rates. Home sales and housing starts are leading variables causing a lagged response from mortgage purchase loans.

Multiple elasticity model specifications were used and compared to provide contrast to the analysis. First a naive regression was used to generate market-wide bench market for rate responsiveness. A dependent variable log specification was pursued due to the presence of heteroskedasticity in the observations. This naive regression was then extended to a non-linear form adding various macro variables and lagged terms to maximize its explanatory scope (see above). Next a comparison between lender-specific HANI and refinance volume was created. Lender showed and increased responsiveness to changes in rate than the market as

Price Elasticity Study - 30Yr Fixed Conforming



a whole experienced. Market HANI with removed lender rates was compared against Lender HANI to generate a spread. This choice was made to show elasticity for deviations from market price. This was later separated to an upside and downside elasticity. Lender volume responded uniquely when rates were observed as above or below market price. Another specification was introduced combining the total movement elasticity and the market deviation elasticity by introducing a binary variable denoting if that weeks lender rates were above the given market price.

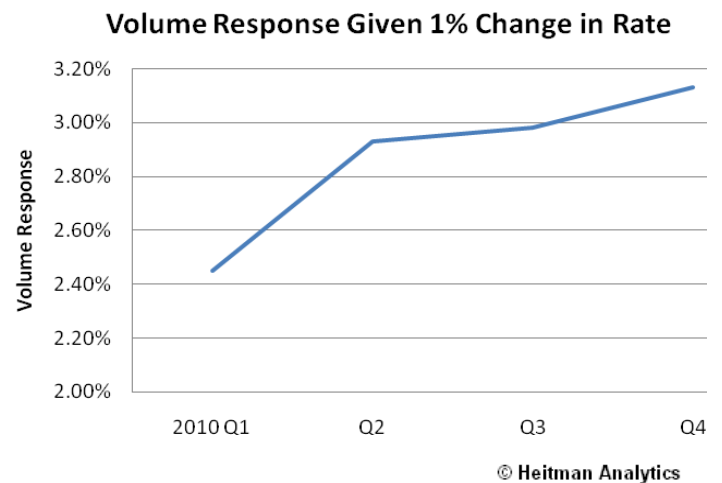
Additional macro-economic variables were included to account for market conditions. Housing starts and homes sales were found to be most significant across all model specifications. Unemployment and housing affordability were omitted due to lack of significance.

Model Specifications

Not disclosed in product sample

Quantified Findings

Given a 1% change in observed rate, lender weekly refinance volume has responded by 3.13% over the given time interval.



External Sources

1. United States Bureau of Labor Statistics
2. Federal Housing Administration
3. Federal Housing Finance Agency
4. Mortgage Bankers association
5. Texas Housing Authority
6. National Association of Home Builders

Data Series and Descriptions

Affordability – The home affordability index for Texas home buyers. Index provided by Texas housing administration, and comprises the average observed home price against the gdp per capita.

HANILender – A weekly normalized 0-point rate that represents the lender's 30YR fixed conforming rate for Texas.

HANILessLender – A weekly normalized 0-point 30YR Fixed Conforming rate of all lenders in Texas, less specific lender.

HomePrice – Average monthly observed home prices in Texas.

HomeSales – Monthly Home sales recorded for the Texas Housing Administration.

HousingStarts – Monthly Homes starting construction in Texas.

LenderCOfiVolume – Lenders reported Cash Out Refinance weekly volume.

LenderPurchaseVolume - Lenders reported weekly purchase volume.

Lenderratespread – The weekly difference between HANILessLender and HANILender.

LenderRefiVolume – Weekly recorded refinance volume for 30YR Fixed Conforming products from lender.

LenderTotalVolume – Total weekly 30 year Fixed Conforming volume from lender.

Maretcorefivolume – Market weekly Cash-out Refinance volume of 30YR Fixed Conforming products.

MarketHani – A normalized 0-point rate observed by the Market for 30Yr fixed conforming products in Texas.

MarketPurchaseVolume – Weekly market volume for Purchased 30YR Fixed Conforming Mortgages in Texas.

Marketrefivolume – Weekly Observed Refinance volume for 30Yr fixed conforming mortgages in Texas.

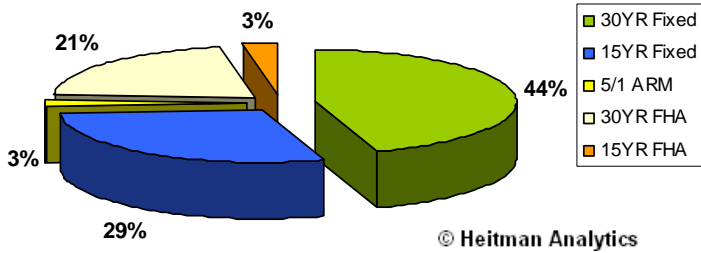
MarkettotalVolume – Total weekly observed market volume for 30Yr fixed Conforming Mortgages.

Totalunemployed – Total monthly unemployed persons in Texas.

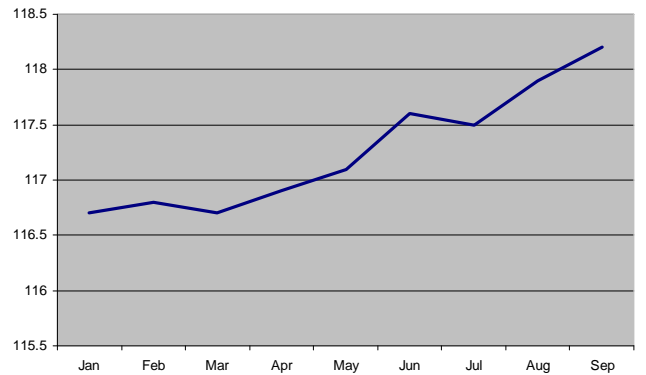
Unemploymentrate – Monthly Texas unemployment Rate.

Additional Charts

Product Market Share

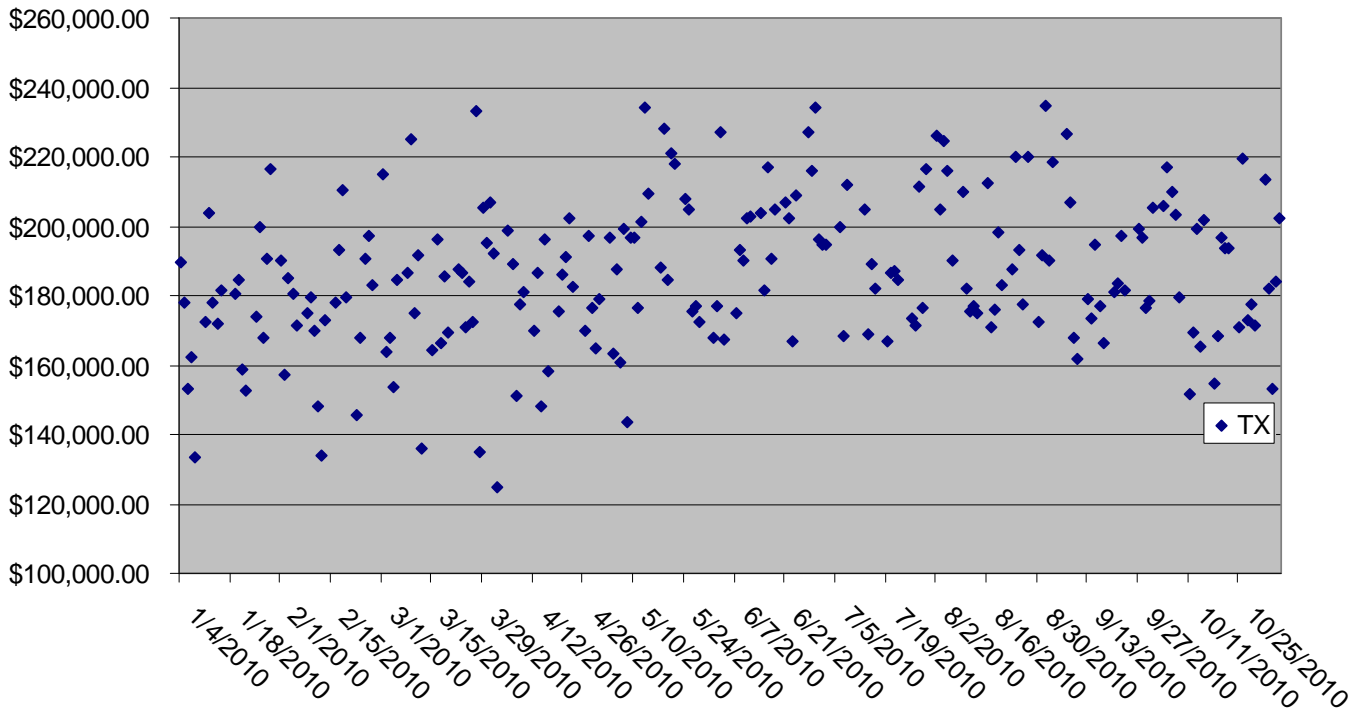


Home Affordability Index

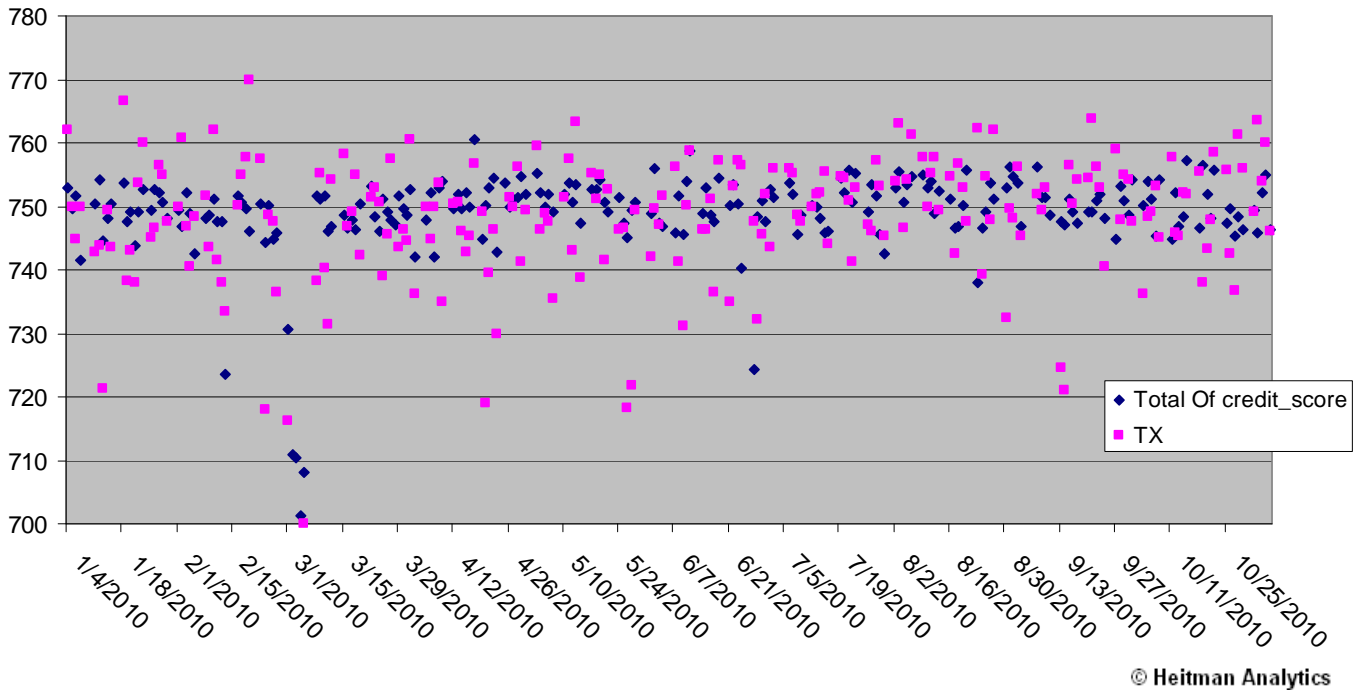


Data Source: National Association of Home Builders

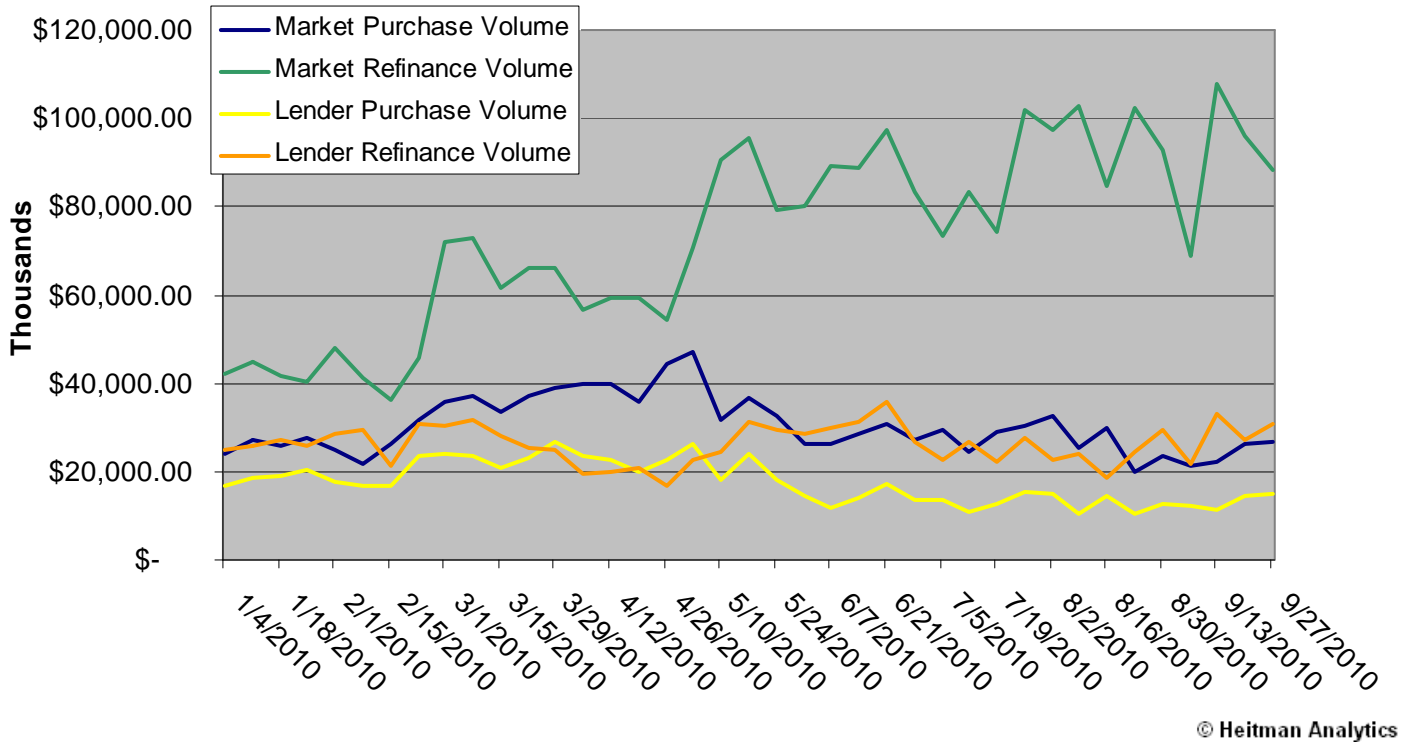
Weekly Average Loan Amount - TX

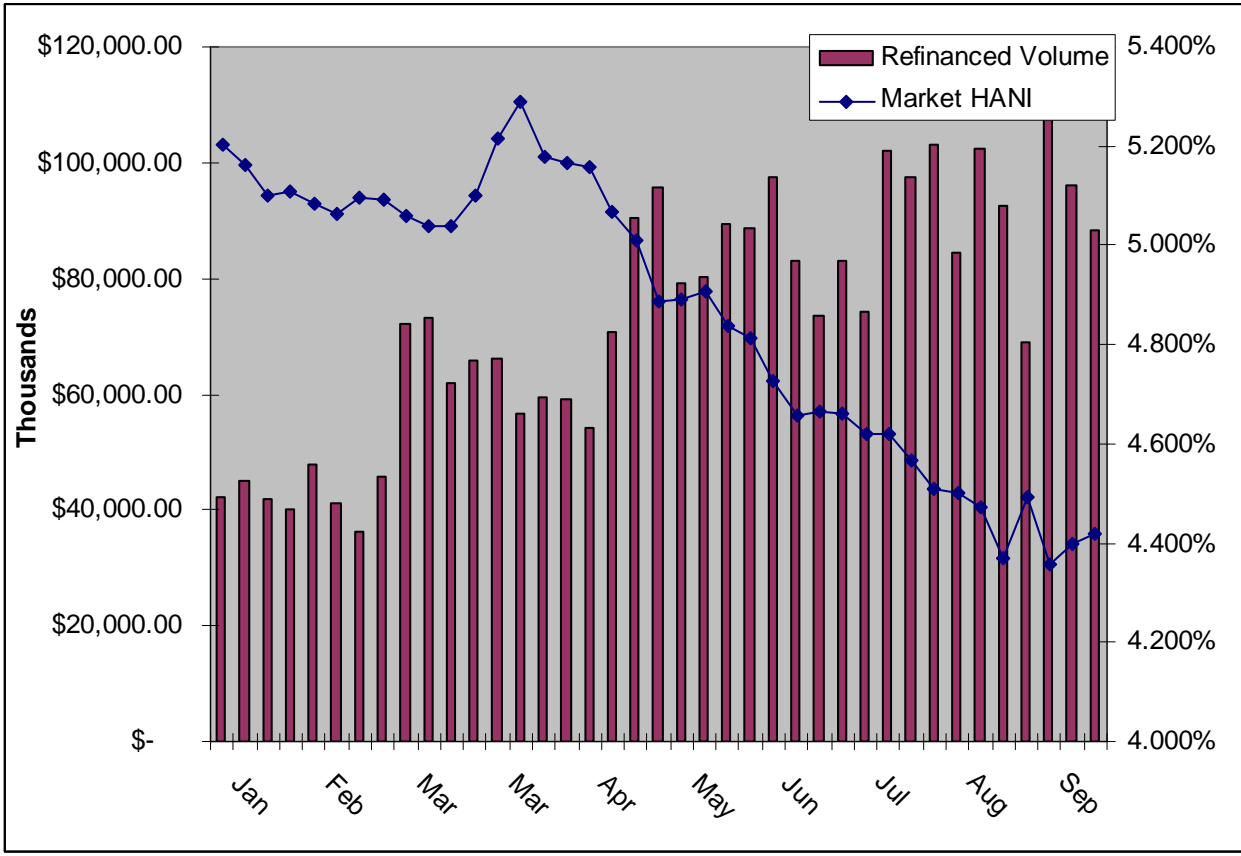


Observed Weekly FICO score - TX



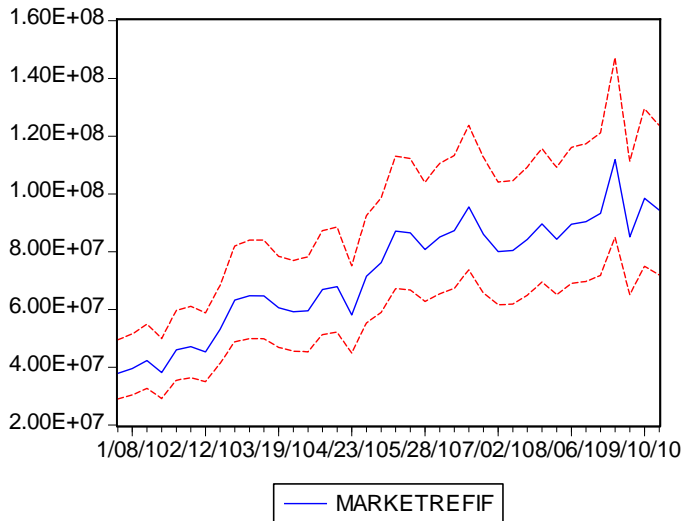
Lender vs Market





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Appendix and Outputs



Forecast: MARKETREFIF
 Actual: MARKETREFIVOLUME
 Forecast sample: 1/01/2010 10/01/2010
 Adjusted sample: 1/01/2010 9/17/2010
 Included observations: 38

Root Mean Squared Error 8053697.
 Mean Absolute Error 6666008.
 Mean Abs. Percent Error 9.392719
 Theil Inequality Coefficient 0.053428
 Bias Proportion 0.002810
 Variance Proportion 0.041628
 Covariance Proportion 0.955562

Dependent Variable: LOG(LENDERREFIVOLUME)
 Method: Least Squares
 Date: 11/19/10 Time: 00:00
 Sample (adjusted): 1/01/2010 9/24/2010
 Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HANILENDER	-41.05780	12.99025	-3.160662	0.0031
C	19.11037	0.646717	29.54982	0.0000
R-squared	0.212595	Mean dependent var		17.06781
Adjusted R-squared	0.191314	S.D. dependent var		0.171678
S.E. of regression	0.154383	Akaike info criterion		-0.848838
Sum squared resid	0.881866	Schwarz criterion		-0.763525
Log likelihood	18.55231	F-statistic		9.989788
Durbin-Watson stat	1.395182	Prob(F-statistic)		0.003135

Dependent Variable: LOG(MARKETREFIVOLUME)
 Method: Least Squares
 Date: 11/18/10 Time: 22:52
 Sample (adjusted): 1/01/2010 9/17/2010
 Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNEMPLOYMENTRATE	12.90778	38.72006	0.333362	0.7410
HOMESALES(1)	1.76E-06	9.72E-07	1.808204	0.0800
HOUSINGSTARTS(1)	2.25E-08	9.32E-07	2.409231	0.0219
HOMEPRICE	2.93E-05	5.15E-06	5.682125	0.0000
MARKETHANI	-87.05732	14.04028	-6.200540	0.0000
C	15.62371	2.900093	5.387312	0.0000
R-squared	0.865971	Mean dependent var		18.05884
Adjusted R-squared	0.845029	S.D. dependent var		0.315445
S.E. of regression	0.124179	Akaike info criterion		-1.190243
Sum squared resid	0.493455	Schwarz criterion		-0.931677
Log likelihood	28.61482	F-statistic		41.35087
Durbin-Watson stat	1.480286	Prob(F-statistic)		0.000000