

# Figures

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## 1 ORIG, EVENTS, LLPA Post-2010 Merge: Summary Statistics

*Summary Statistics of LLMA's ORIG + EVENTS in or after 2010 (Jorge's DTA Files), merged with the scraped LLPA Tables.*

	Cash-Out Refinance	All Eligible Loans
No. of Obs.	1,690,058	9,523,859
Mean Initial Interest	4.23	4.11
Mean Credit Score	725.87	738.11
Mean Original L.T.V.	69.47	78.09
Median Orig. Balance	253,790.20	278,388.40
Mean Prob. Delinq.	0.0084	0.008

## 2 Results from the 2013- and 2020-Originated Loans

Difference in Cost of Insurance Premiums (2020 - 2013)

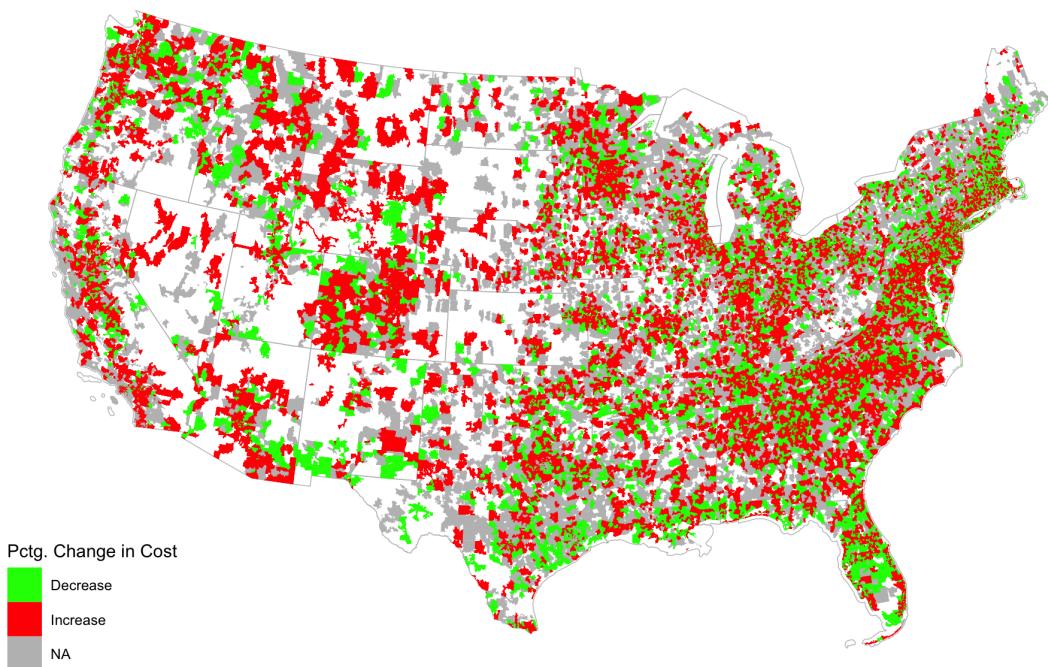


Figure 1: Caption

Difference in Cost of Insurance Premiums (2020 - 2013)

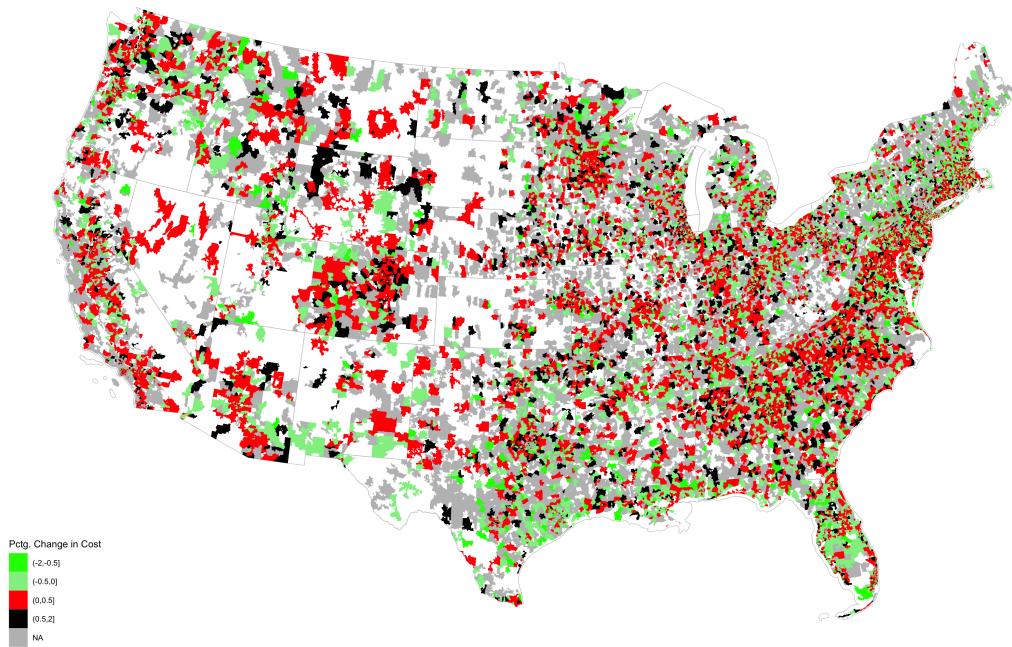


Figure 2: Caption

### 3 Results from LLMA\_ALL.tsv sample

These were derived from the ORIG-EVENTS-PERF-SLA balanced sample of around 900,000 unique loan ids per period.

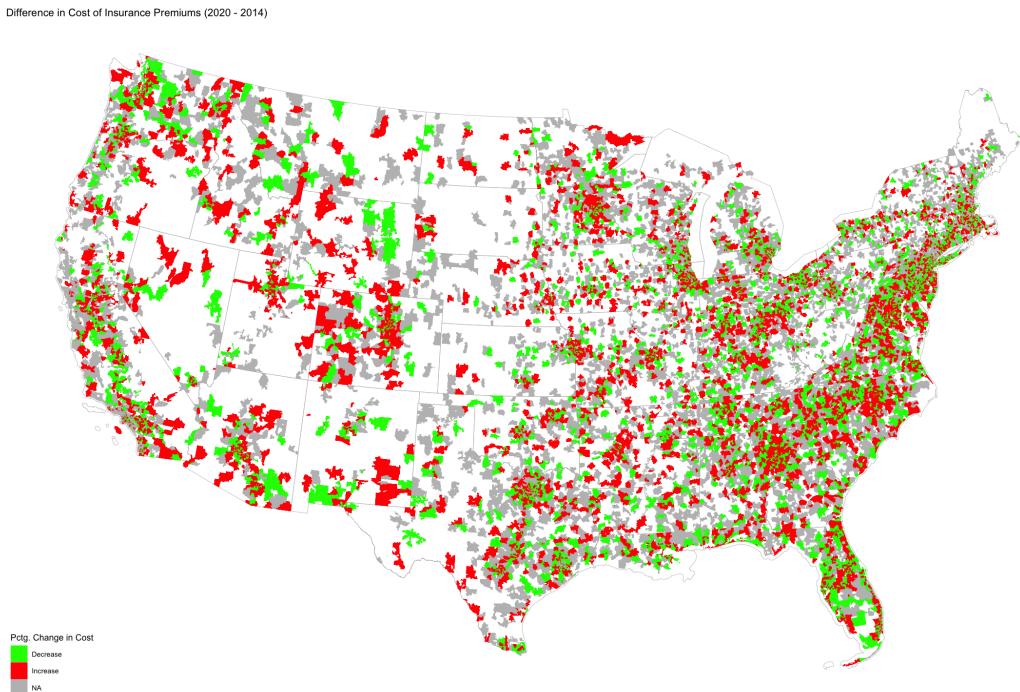


Figure 3: Caption

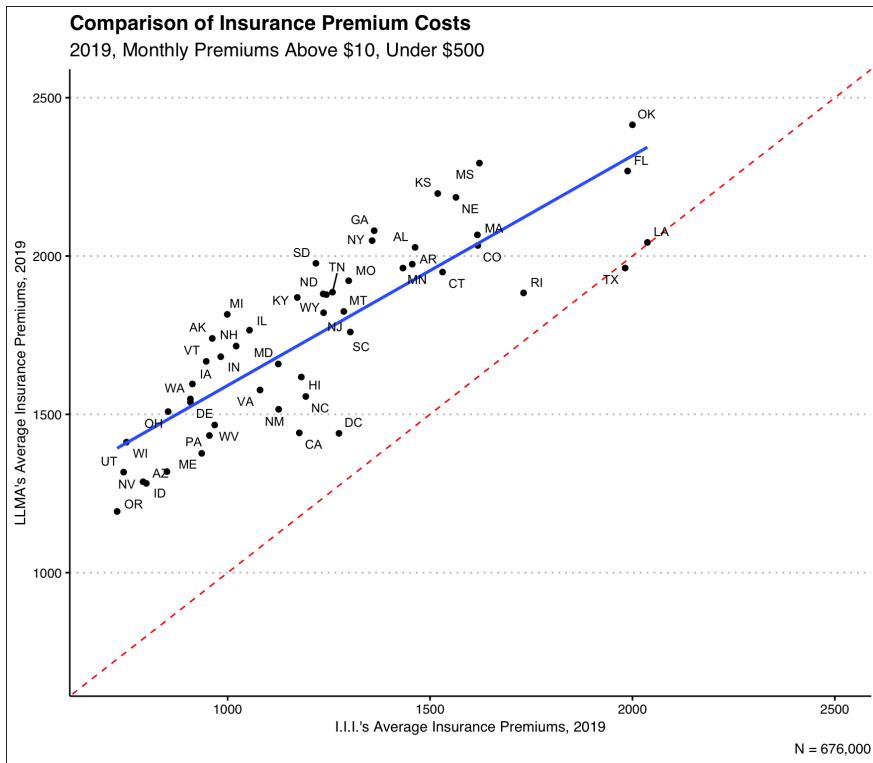


Figure 4: Caption

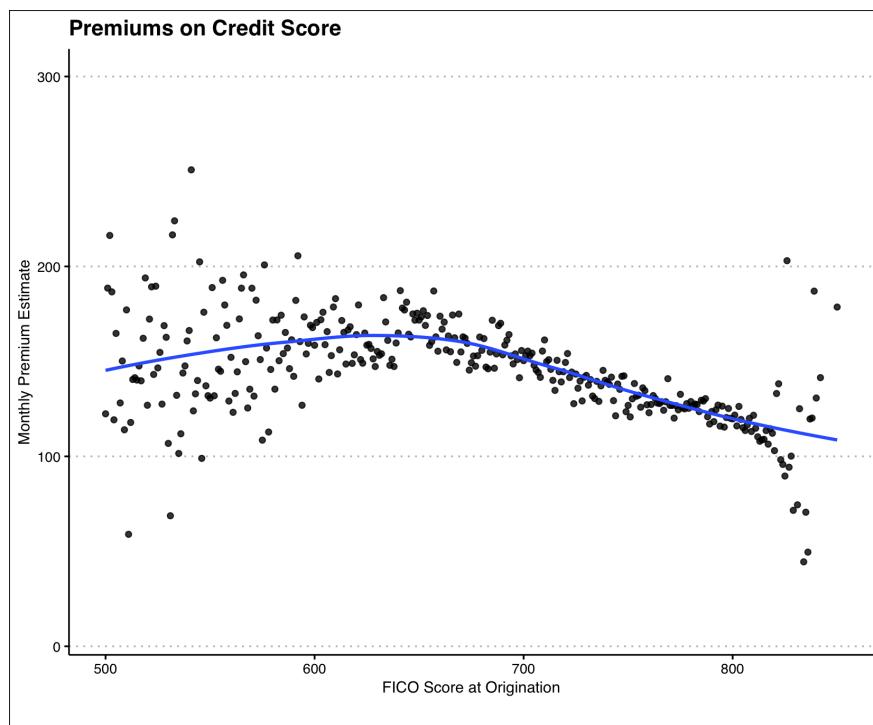


Figure 5: Caption

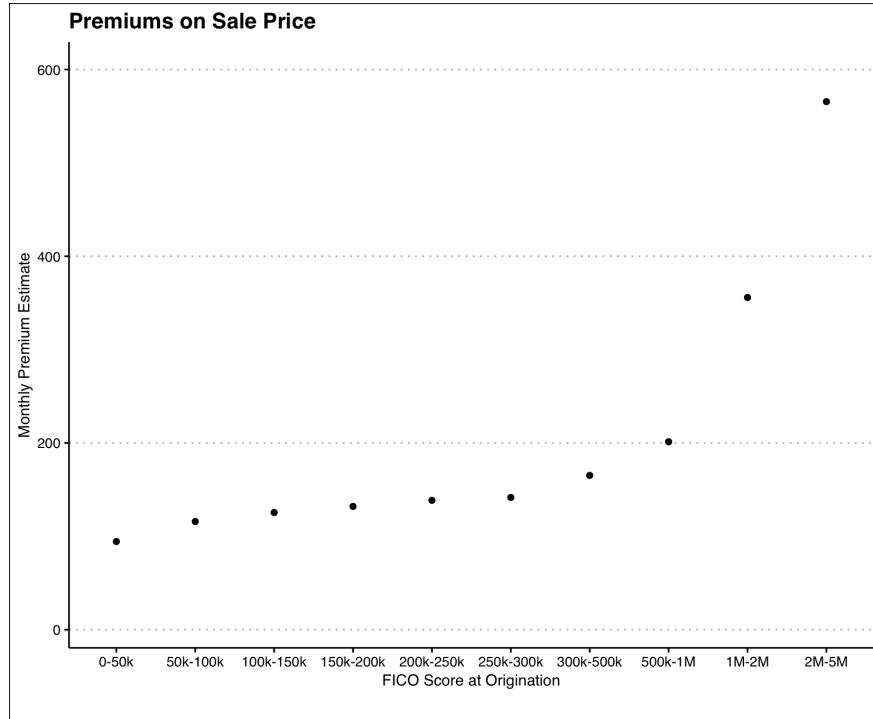


Figure 6: Caption

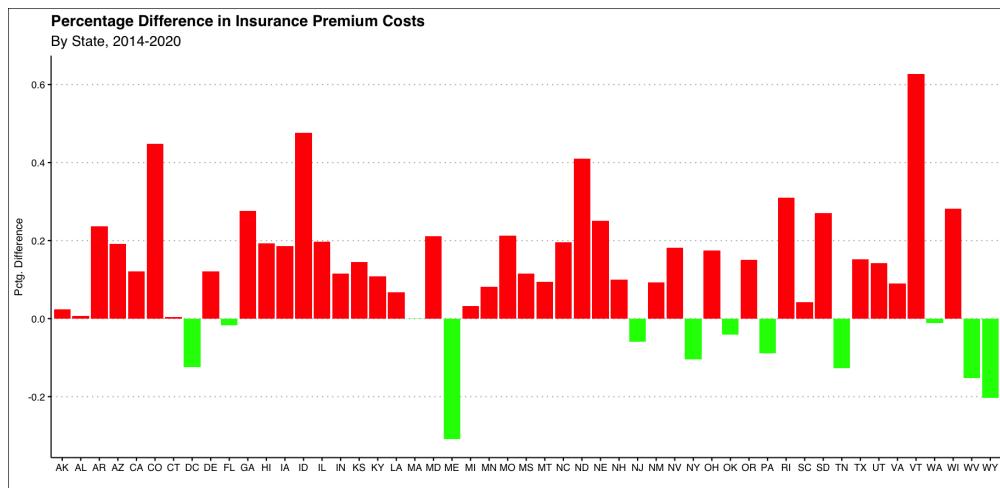


Figure 7: Caption

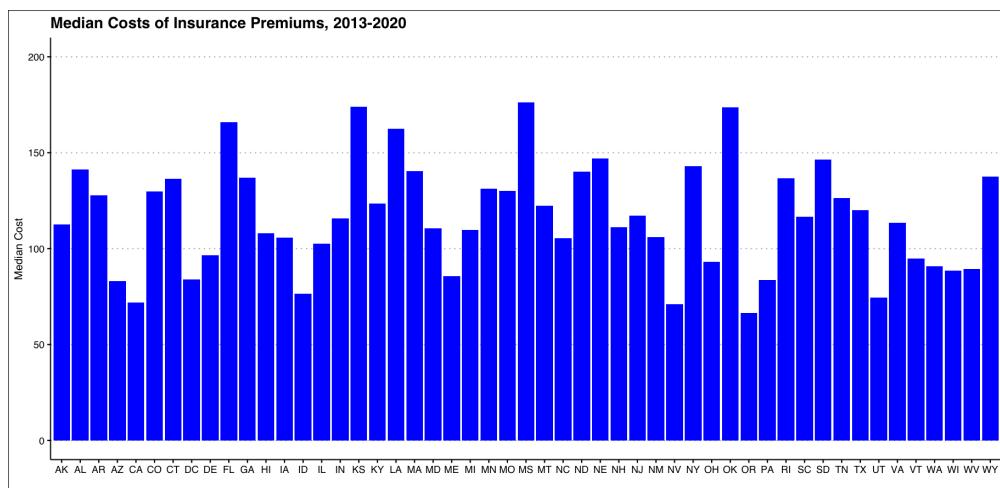


Figure 8: Caption

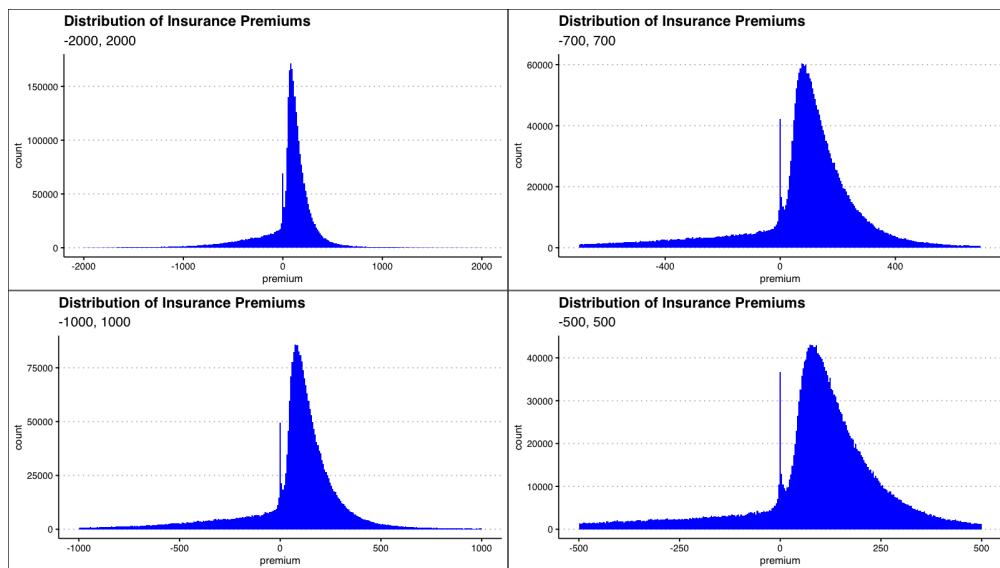


Figure 9: Caption

## 4 Comparison of Cash-Out Refi and All Eligible, Post-2010 (Inclusive)

### 4.1 3-D Scatterplot

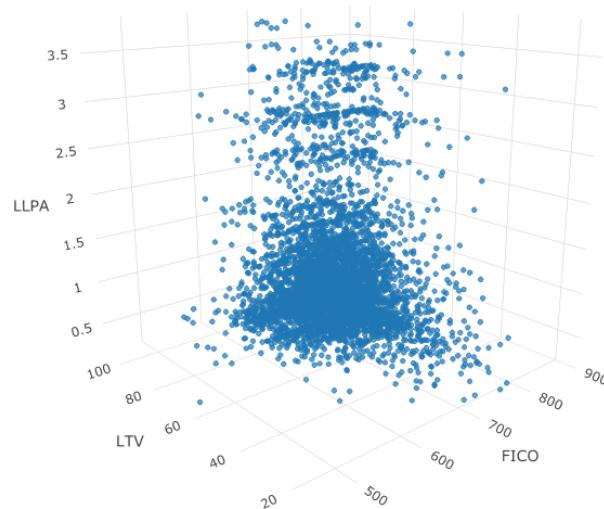


Figure 10: LLPA on LTV and FICO

### 4.2 Performance-on-LLPA Scatterplots

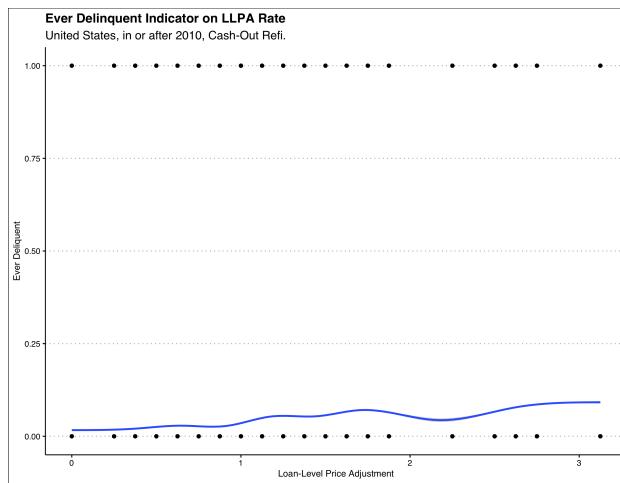


Figure 11: Ever Delinquent Indicator on LLPA

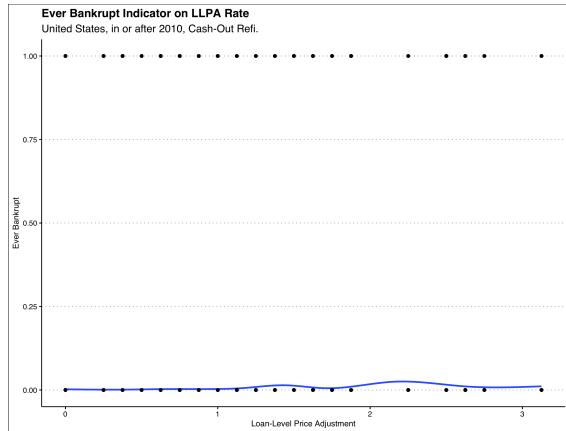


Figure 12: Ever Bankrupt Indicator on LLPA

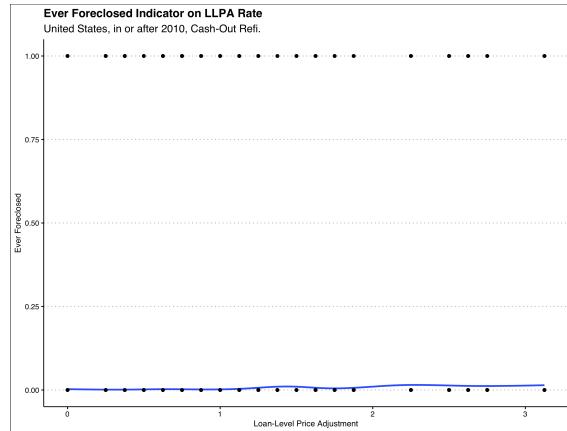


Figure 13: Ever Foreclosed Indicator on LLPA

### 4.3 LLPA by Credit Score

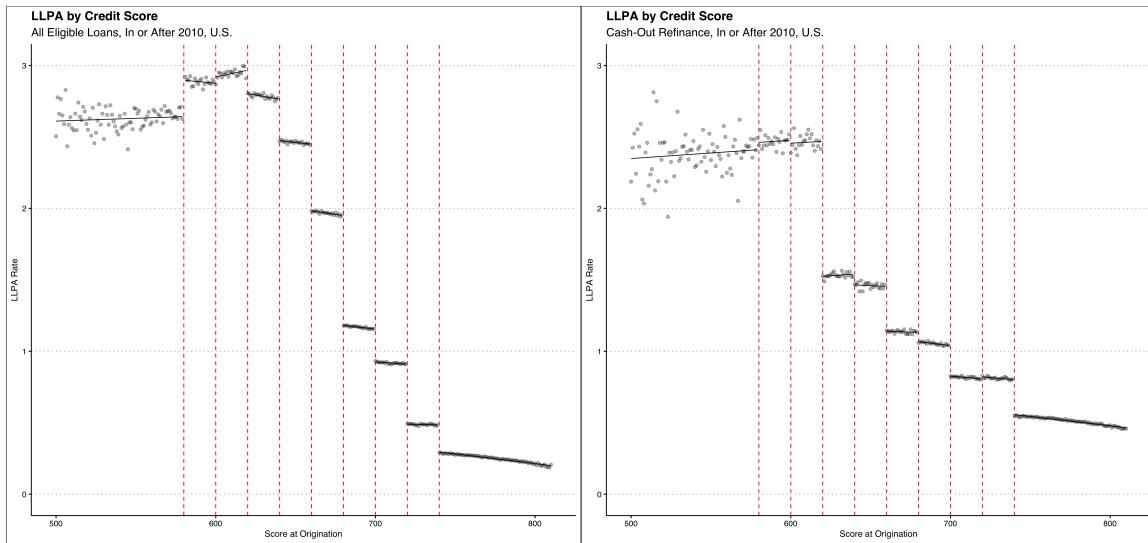


Figure 14: LLPA by Credit Score

#### 4.4 Original LTV by Credit Score

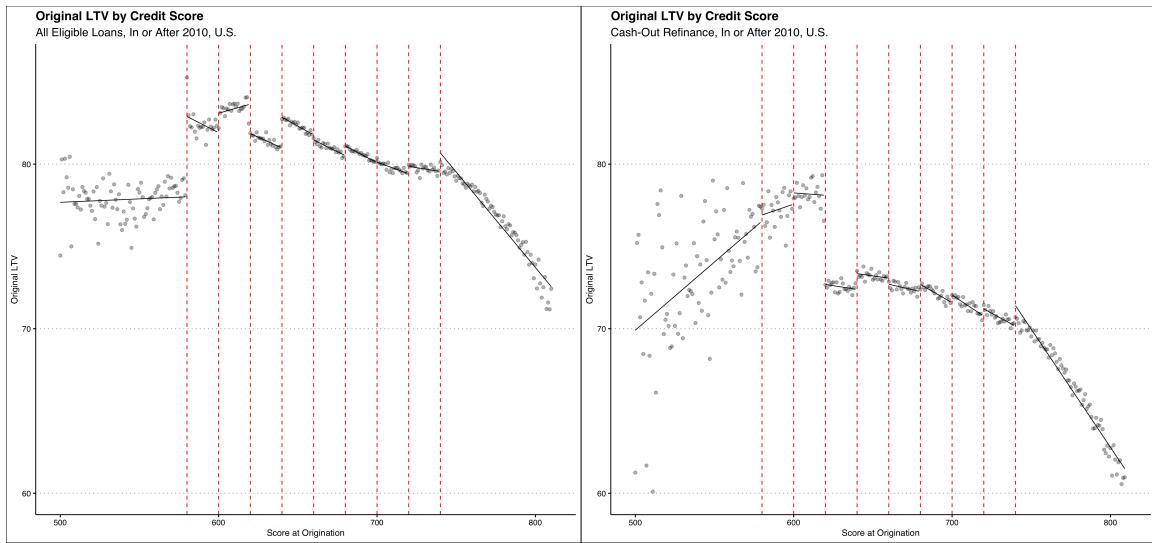


Figure 15: Original LTV by Credit Score

#### 4.5 Original Interest by Credit Score

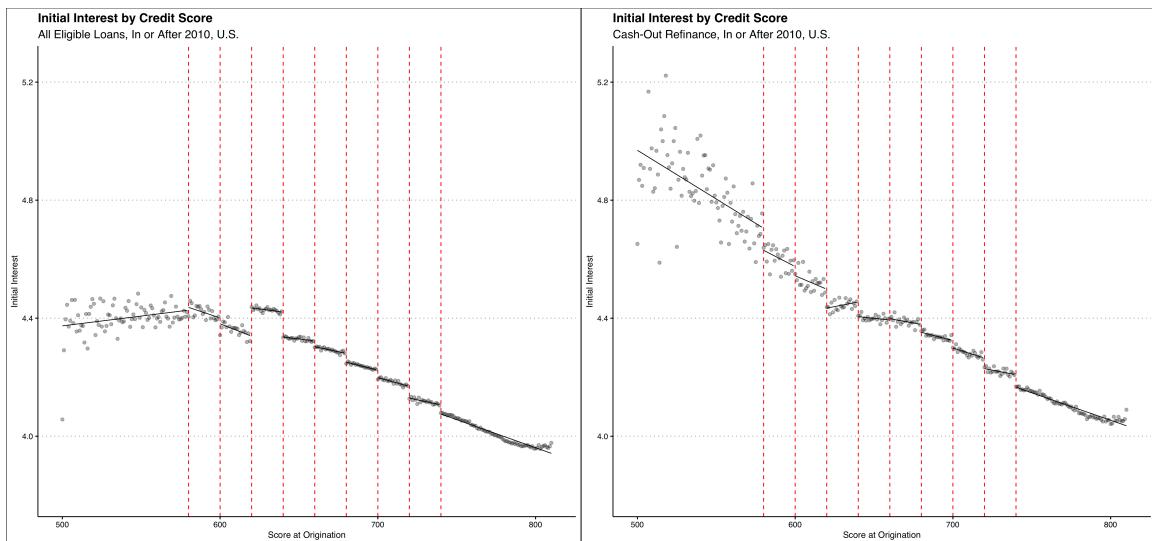


Figure 16: Original Interest by Credit Score

## 4.6 90-Day Probability of Delinquency by Credit Score

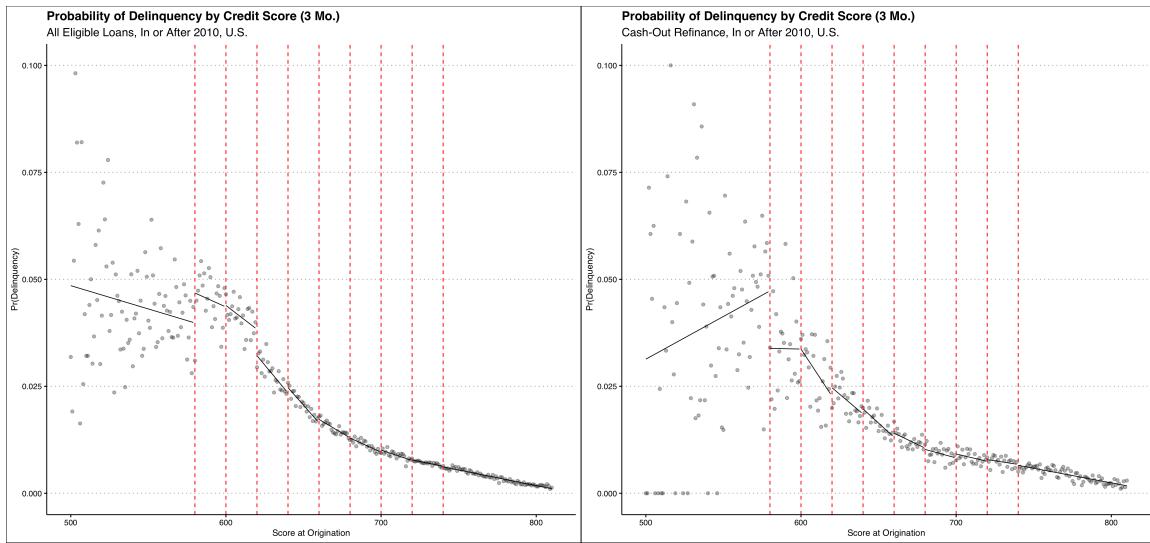


Figure 17: 90-Day Probability of Delinquency by Credit Score

## 4.7 Median Balance by Credit Score

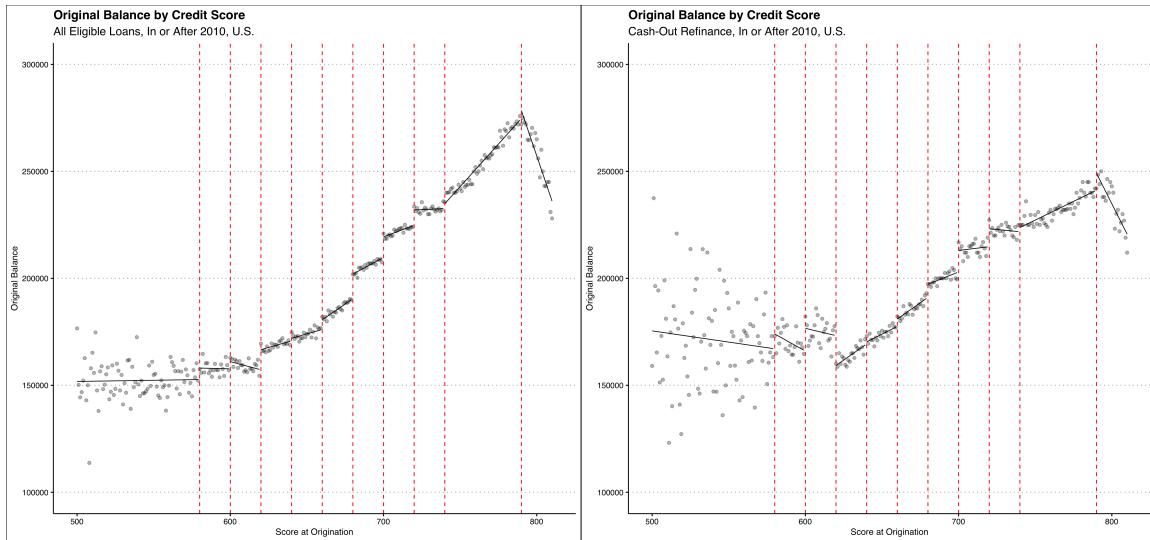


Figure 18: Median Balance by Credit Score

## 4.8 Histogram

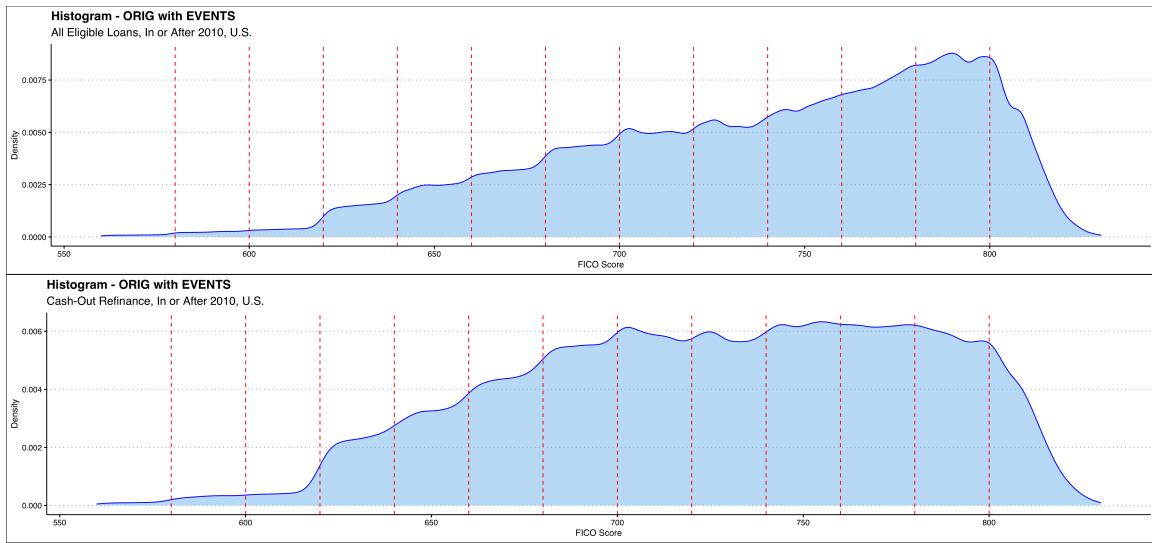
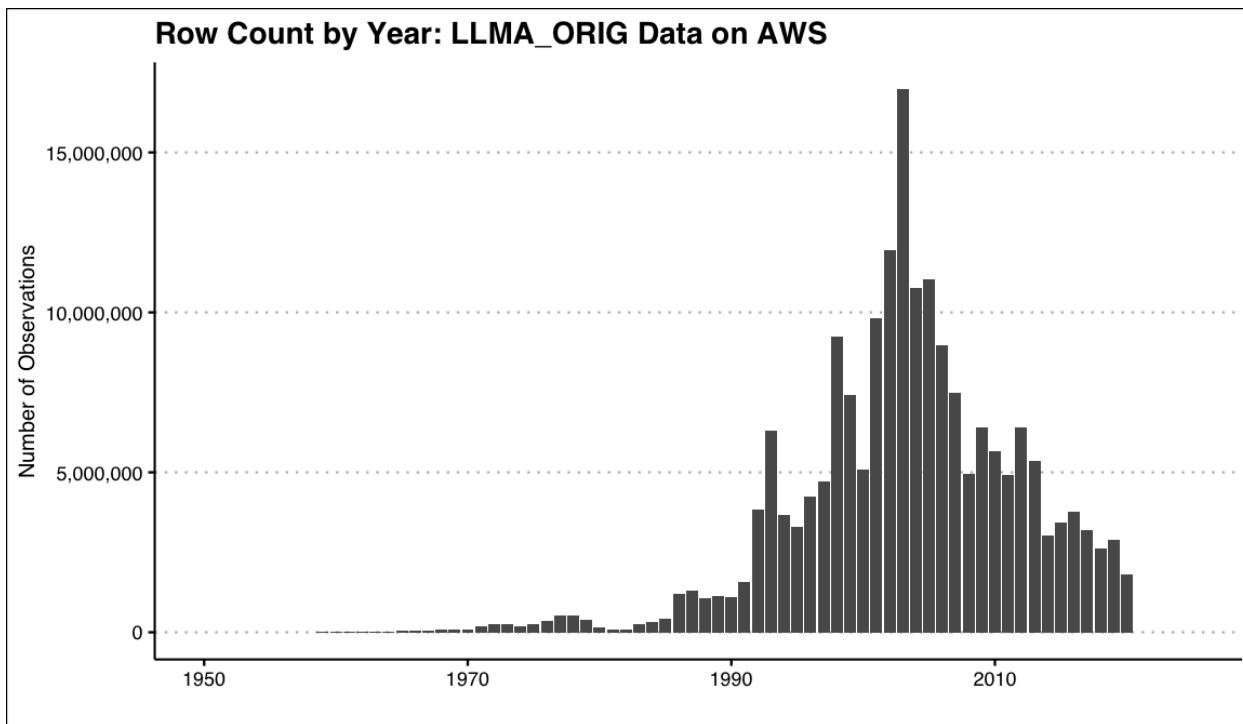


Figure 19: Number of Observations by Score

## 5 Appendix



• LLMA_ORIG
◦ Number of Rows: 191,429,337
◦ loan_id, add_date, property_zip, state, property_type, number_of_units, occupancy_type, origination_date, maturity_date, first_payment_date, original_balance, sale_price, appraised_value, product_type, original_term, initial_interest_rate, back_end_ratio, loan_type, loan_purpose, payment_frequency, channel, buydown_flag, documentation_type, pmr_company_code, convertible_flag, pool_insurance_flag, original_ltv, negative_amortization_flag, arm_index_id, margin, periodic_rate_cap, periodic_rate_floor, lifetime_rate_cap, lifetime_rate_floor, rate_reset_frequency, pay_reset_frequency, first_rate_reset_period, fico_score_at_origination, lien, prepay_penalty_flag, prepay_penalty_term, combined_ltv_at_origination, cbsa, io_term, io_flag, msa, paid_off_flag, inferred_collateral_type, collateral_type, orig_active_status, period, product_type_category, loan_purpose_category, mortgage_insurance_flag, gse_eligible_flag
• LLMA_EVENTS
◦ Number of Rows: 191,429,814
◦ loan_id, active_status, epd_fha, epd_gse, foreclosure_start_date, foreclosure_end_date, bankruptcy_start_date, bankruptcy_end_date, bankruptcy_chapter, payoff_period, payoff_date, first_period_30_days_delinquent, first_period_60_days_delinquent, first_period_90_days_delinquent
• LLMA_PERF
◦ Number of Rows: 8,128,527,998
◦ loan_id, last_paid_interest_date, current_balance, current_interest_rate, total_payment_due, scheduled_principal, scheduled_monthly_pi, mba_delinquency_status, ots_delinquency_status, mba_days_delinquent, ots_days_delinquent, delinquency_history_string, active_status, period_of_payment, current_investor_code, current_product_type, loan_age, mba_worstEver, ots_worstEver, bk_flag
• LLMA_SLA
◦ Number of Rows: 5,517,884,820
◦ LOAN_ID, PROP_LIST, PROP_DOM, PROP_CLTV, PROP_EQUIITY, PROSP_AVM, PROSP_FSD, PROSP_CONF_LVL, OPEN_LIEN_CNT, OPEN_LIEN_AMT, HPIVE_VALUE, LIEN1_ORIG_DT, LIEN1_ORIG_AMT, LIEN1_CLOSE_INT_TYPE, LIEN2_ORIG_DT, LIEN2_ORIG_AMT, LIEN2_CLOSE_INT_TYPE, LIEN3_ORIG_DT, LIEN3_ORIG_AMT, LIEN3_CLOSE_INT_TYPE, LIEN4_ORIG_DT, LIEN4_ORIG_AMT, LIEN4_CLOSE_INT_TYPE, OCC_INDICATOR, TAX_EXEMPT, AVM_SOURCE, AVM, AVM_FSD, AVM_CONF_LVL, TAX_AMT, TAX_YR, LAND_SQ_FT, LIVING_SQ_FT, EFF_YR_BUILT, BEDRM_CNT, RM_CNT, BATRM_CNT, BASEMENT, GARAGE, POOL, STORIES, PURPOSE, PURCHASE_PRICE, FHA_REFI_FLAG, LENDER_REFI_FLAG, PP_EXP_DT, RT_TYPE, INIT_RT, IO_FLAG, NEGAM_FLAG, INIT_RT_RESET_DT, RT_RESET, RT_RESET_FREQUENCY, MARGIN, INDEX_TYPE, PBACK_PERIOD, L_RT_CAP, P_RT_CAP, INIT_RT_RESET_CAP, PBACK_ORIG_DT, PBACK_ORIG_AMT, PBACK_RT_TYPE, PBACK_TERM_AMT, PBACK_TERM_CD, PBACK_RELEASE_DT, PBACK_RELEASE_TYPE, PBACK_LOAN_ID, DFLT_DT, DFLT_DOC_TYPE, REO_DAYS, MOD_RECORD_DT, MOD_AMT, MOD_DUE_DT, MOD_INIT_RT, HAMP_FLAG, PAYOFF_DT_RELEASE_DOC, PAYOFF_DT_INF, PAYOFF_TYPE, PAYOFF_REFI_TYPE, PAYOFF_REFI_INIT_RT_TYPE, PAYOFF_REFI_TERM, SALE_TYPE, FIRST_SALE_DT, FIRST_SALE_PRICE, FIRST_SALE_PRICE_TYPE, SECOND_SUB_SALE_DT, SECOND_SUB_SALE_PRICE, SECOND_SUB_SALE_PRICE_TYPE, PERIOD_NO.

Figure 21: Number of Observations by Score