

Mortgage Performance Summary



THE FEDERAL RESERVE BANK OF RICHMOND

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Mortgage Performance Summary for Virginia: Fourth Quarter, 2008

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This document provides an overview of mortgage performance in Virginia. The first section provides some background information on Virginia's housing stock and how it evolved during the past decade. The second section provides information on the size and composition of the Virginia mortgage market. The third section reports mortgage performance and identifies areas where mortgage performance is likely to deteriorate in the near future. The last section provides an in-depth look at Northern Virginia, where the performance of mortgages is noticeably worse than the rest of Virginia and most of the Fifth District. Finally, an appendix lists more detailed information about mortgage composition and performance at the MSA level and for selected counties.

Section 1: Housing Background

Supply

According to the American Community Survey, the Census Bureau estimates that in 2007 there were 2,932,234 occupied housing units in Virginia. Of these housing units, 69.5 percent (2,038,098) were owner-occupied compared to 67.2 percent nationally.

The estimated number of total housing units rose 12.7 percent in Virginia between 2000 and 2007 due to the state's highest level of building activity since the late 1980s. Building permits for single family homes increased each year from 2001 to 2005, peaking at 49,867 in 2005 (see Figure 1). And in 2004, total housing starts reached their highest level since 1989 with more than 60,000 units.

Despite the accelerated pace of building early in the decade, homeowner vacancies in Virginia fell to 1.0 percent in 2004 – their lowest level since 1988 – after a high of 3.0 percent in 1999. Months' supply of homes, a measure of how long homes are on the market, also fell earlier this decade in the Washington, D.C. and Richmond metro areas.² According to the National Association of Realtors, the months' supply of homes in Northern Virginia remained under three months from mid 2000 through late 2005, and under four months between 2002 and 2005 in the Richmond MSA. Analysts typically consider six months as a useful threshold for assessing whether sales are slow or not.

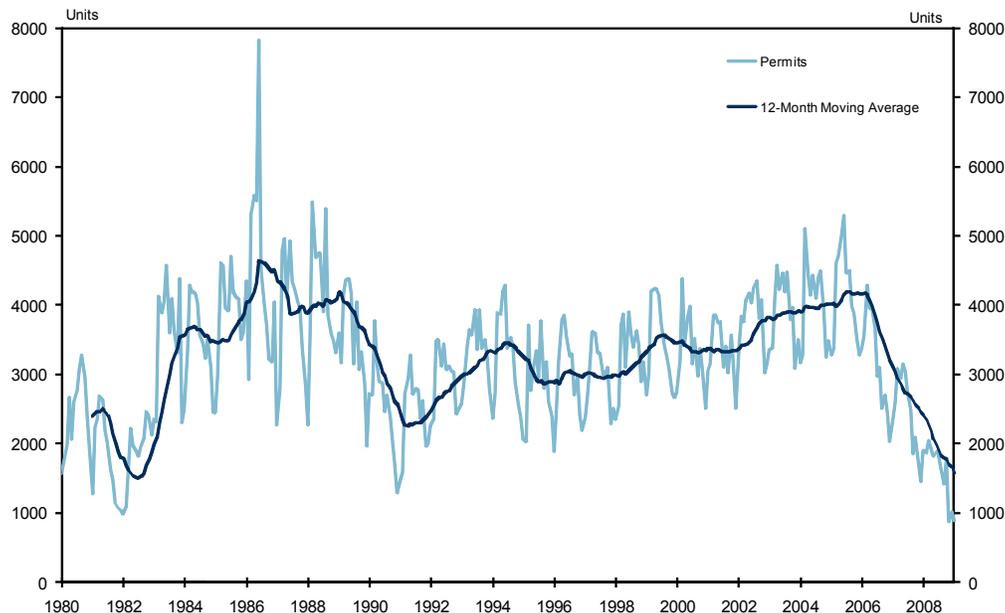
Demand

During the first half of the decade, the demand for homes in the state increased due to a number of factors. The Census estimated that the population of residents 25 years old or older increased 9.5 percent between 2000 and 2007. According to the Bureau of Labor Statistics payroll survey, nonfarm employment increased at an average annual rate of 2.1 percent from 2003 to 2006, after contracting an average of 0.2 percent per year between 2000 and 2003. Real personal income growth also accelerated towards the end of 2003, increasing at least 4.0 percent annually between 2004 and 2006, according to the Bureau of Economic Analysis.

¹ The views expressed in this article are those of the authors and not necessarily the views of the Federal Reserve Bank of Richmond or the Federal Reserve System.

² Months' supply is defined as the number of houses for sale divided by the number of houses that sold in a month. It is a rough measure of how long a house will take to sell.

Figure 1
Single-Family Housing Building Permits
Virginia



Source: Census Bureau/Haver Analytics

In addition to a growing population and strengthening economy, more liberal and innovative lending practices increased credit access to many borrowers previously unable to qualify for mortgages. Additionally, according to the Federal Housing Finance Board, the effective rate on conventional mortgages in Virginia fell every year from 2000 to 2004, reaching as low as 5.8 percent in 2004. New mortgage products, relaxed underwriting standards, and lower interest rates contributed to existing home sales moving higher. After averaging 98,200 units in the 1990s, existing home sales averaged 154,700 units a year between 2000 and 2006, according to the National Association of Realtors.

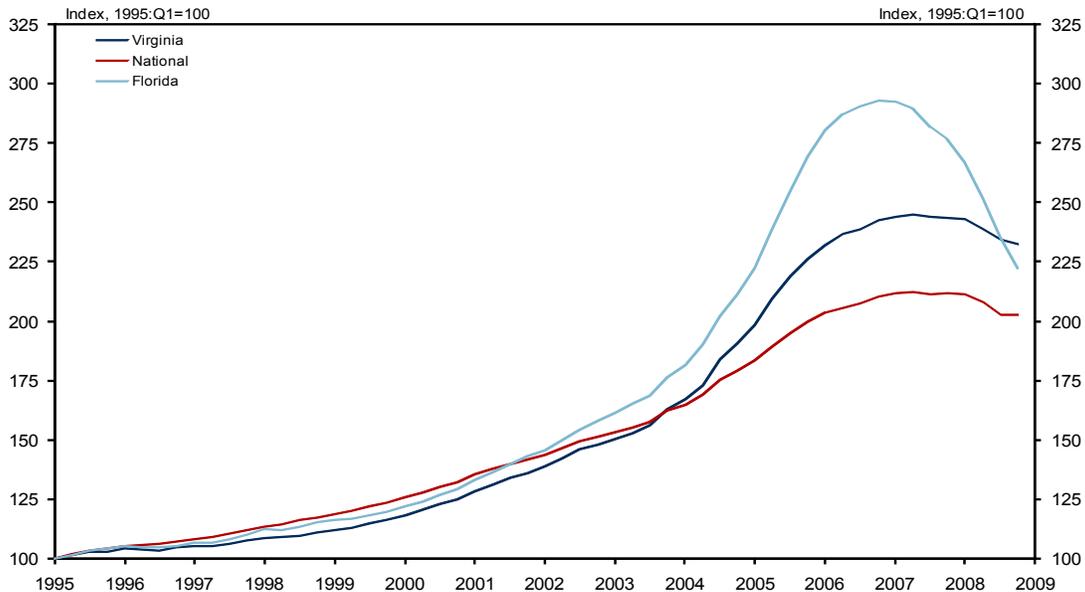
House Prices

In addition to the rise in residential construction and mortgage lending, the United States also experienced considerable house price appreciation throughout the first part of the decade. Research has found that declines in house prices, even more than unemployment, are the most important factor in mortgage delinquencies and foreclosures.³ As long as house prices do not drop, a borrower will typically have at least a little equity in his house and can sell it to avoid foreclosure in the event of cash-flow problems. However, when house prices decline, fewer borrowers will have an equity cushion to fall back on, increasing the likelihood of defaulting on their mortgage.

As Figure 2 indicates, between 2004 and 2007, house prices grew faster in Virginia than in the nation. Despite the high growth, however, the increase in Virginia's house prices was smaller

³ See, for example, Doms, Mark, Fred Furlong, and John Krainer, "[Subprime Mortgage Delinquency Rates](#)," Federal Reserve Bank of San Francisco Working Paper 2007-33, November 2007 and Foote, Christopher, Kristopher Gerardi, and Paul S. Willen "[Negative Equity and Foreclosure: Theory and Evidence](#)," Federal Reserve Bank of Boston Public Policy Discussion Papers Series, Paper No. 08-3, 2008.

Figure 2
FHFA House Price Index
Virginia



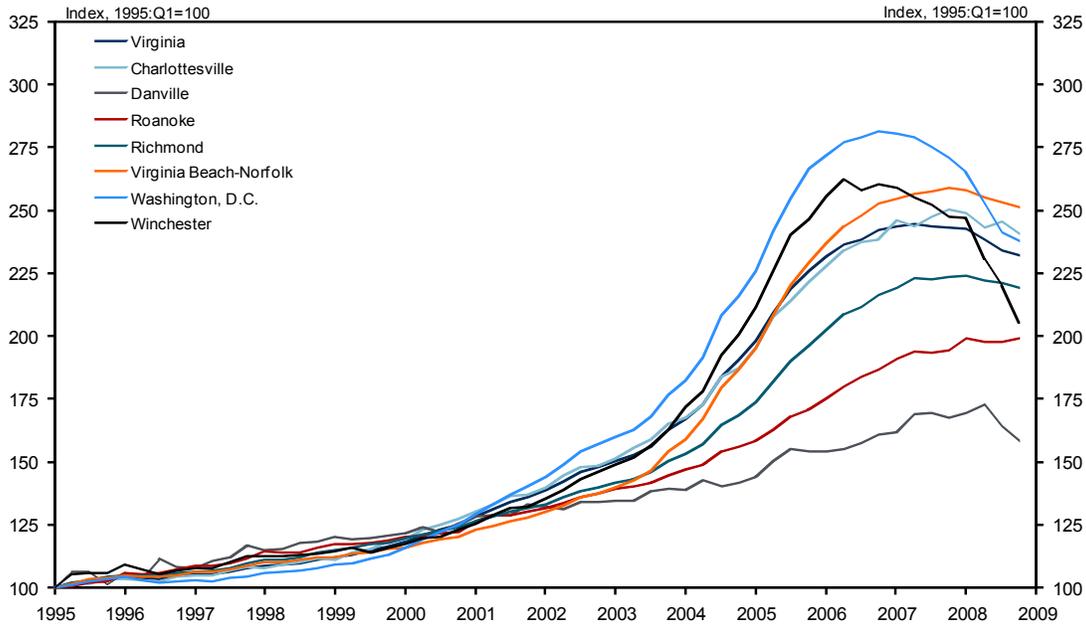
Source: Federal Housing Finance Agency (formerly OFHEO)/Haver Analytics

than the growth seen in some states like California or Florida. Since the second quarter of 2007, house prices in Virginia fell 5.2 percent, according to the Federal Housing Finance Agency (FHFA) House Price Index. The five subsequent quarters of decline in Virginia’s house price index coincided with the Commonwealth’s six largest quarterly increases in seriously delinquent mortgages.⁴

Just as there has been a lot of variation in the changes of housing prices across the nation, there has also been a lot of variation within Virginia. Figure 3 shows the FHFA House Price Index for the Commonwealth’s metropolitan statistical areas (MSAs). Generally, house prices appreciated at faster rates in the metro areas located in Northern Virginia (Washington, D.C. and Winchester) or along the coast (Virginia Beach-Norfolk). Conversely, other areas – such as the Richmond and Roanoke MSAs – experienced lower rates of appreciation. While house prices have declined from their peaks in most of the MSAs, the drop has been the largest in the Northern Virginia MSAs and, as we will see later, these areas have had the worst mortgage performance.

⁴ Seriously delinquent mortgages are loans 90+ days past due plus those in foreclosure according to MBA.

Figure 3
FHFA House Price Index
Virginia Metro Areas



Source: Federal Housing Finance Agency (formerly OFHEO)/Haver Analytics

Section 2: Mortgage Composition in Virginia

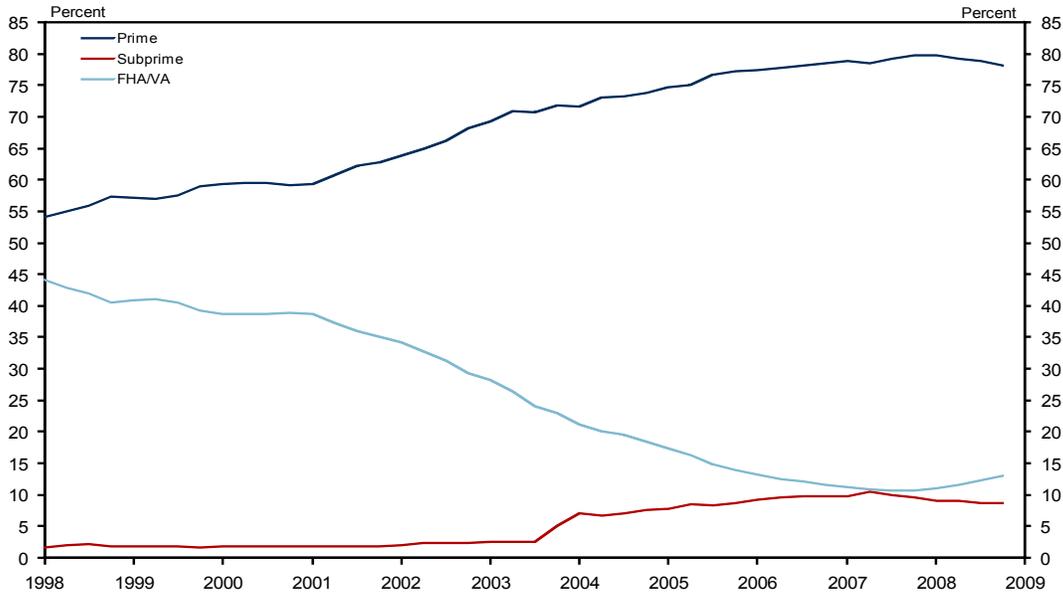
According to the Census Bureau, 73.1 percent of the 2,038,098 owner-occupied housing units in Virginia had an active mortgage in 2007, up from 72.6 percent in 2000 and higher than the U.S. rate of 68.4 percent for 2007. Using the Lender Processing Services Applied Analytics (LPS) mortgage dataset, and scaling to compensate for the dataset's incomplete coverage, we estimate that Virginia had about \$404 billion of mortgage debt in 2008, accounting for 3.6 percent of the outstanding mortgage debt in the nation.

The mortgages can be split into two kinds, prime and nonprime. Prime mortgages are made to borrowers with strong credit backgrounds. The nonprime mortgage sector is often further split into the subprime and Alt-A parts. Subprime mortgages are mortgages made to people with poor credit scores; often, a FICO score⁵ below 620 is used to identify one of these mortgages. Alt-A mortgages, on the other hand, are “near-prime” mortgages made to borrowers with good credit scores but for which there are other risk factors, such as relaxed underwriting, or risky loan characteristics.⁶

⁵ FICO is a commonly used credit score created by Fair Isaac Corporation.

⁶ Relaxed underwriting can include a high loan-to-value or having little documentation of the borrower's income. Risky loan characteristics include interest only or negative amortization features.

Figure 4
Percent of Mortgages by Type⁷
Virginia



Notes: Federal Housing Administration (FHA) and Veterans Affairs (VA) mortgages partially protect lenders against losses in case of default. Virginia has a relatively high fraction of VA loans due to the relatively high fraction of military personnel who live in the Commonwealth.

Source: Mortgage Bankers Association (MBA) National Delinquency Survey (2008:Q4)/Haver Analytics

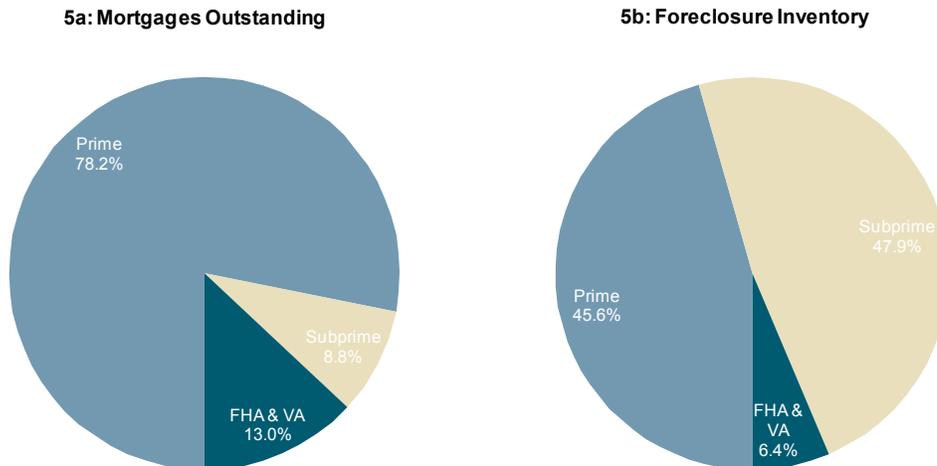
Although subprime mortgages have been originated for more than two decades,⁸ the volume of these mortgages started to increase around 2002 and 2003.⁹ Figure 4 shows the fraction of subprime loans as measured by the MBA survey. They reached a peak of about 10 percent early in 2007. However, even with the recent rise in subprime lending, Figure 5a shows that the majority of outstanding loans are prime. In Virginia 8.8 percent of all mortgages are subprime compared to 11.7 percent nationally.

⁸ The MBA National Delinquency Survey and the LPS dataset do not have a separate category for Alt-A mortgages, so in both cases Alt-A loans can be in either the prime or subprime category. Also, the jump in subprime mortgages measured in 2003 is due to the addition of a major subprime servicer to the survey that year. For more detailed estimates of the prevalence of subprime lending over time see Mayer and Pence (2008). Mayer, Chris and Karen Pence, "[Subprime Mortgages: What, Where, and to Whom.](#)" Federal Reserve Board, FEDS Working Paper 2008-29.⁷

⁷ Ben S. Bernanke, "[The Subprime Mortgage Market.](#)" speech delivered at the Conference on Bank Structure and Competition, Chicago, IL, May 17, 2007.

⁸ For a variety of reasons defining the size of the subprime market is difficult. For the best estimates see Mayer and Pence (2008). For convenience, we use the MBA numbers, which are discussed in more detail in footnote 9. The spike in subprime lending in mid-2003 in the graph is due to the addition of a large subprime servicer to the survey at that time.

**Figure 5
Virginia Mortgage Distribution**



Source: Mortgage Bankers Association (2008:Q4)/Haver Analytics. Percentages may not sum to 100 due to rounding.

Section 3: Mortgage Performance in Virginia¹⁰

Not surprisingly, mortgage performance differs by mortgage type. Much of the recent increase in foreclosure activity has been on subprime mortgages as their performance has been notably worse than that of prime loans. While subprime loans make up a relatively small fraction of outstanding mortgages, they account for a much larger share of the loans in foreclosure. Figure 5b shows that they account for almost half of all foreclosures in Virginia.

Mortgage performance also differs by whether the loan is an adjustable rate mortgage. Table 1 reports performance for several types of mortgages. Subprime adjustable-rate mortgage loans perform substantially worse than all the other categories, including subprime fixed-rate loans. The main reason these loans have performed so poorly is that they seem to have been underwritten based mainly on the expectation home prices would continue to appreciate.¹¹

⁹For mortgage performance data, we use two sources, the MBA National Delinquency Survey and Lender Processing Services Inc. (LPS). The MBA survey has broad coverage, but only provides information down to the state level. The LPS survey is a proprietary loan level database that covers an estimated 60 percent of the mortgage market. Its coverage of the prime market is much more extensive than that of the subprime market.

¹⁰ For more information on differences between subprime adjustable and fixed- rate mortgages, see Frame, Scott, Andreas Lehnert, and Ned Prescott, "[A Snapshot of Mortgage Conditions with an Emphasis on Subprime Mortgage Performance](#)," Manuscript August 2008.

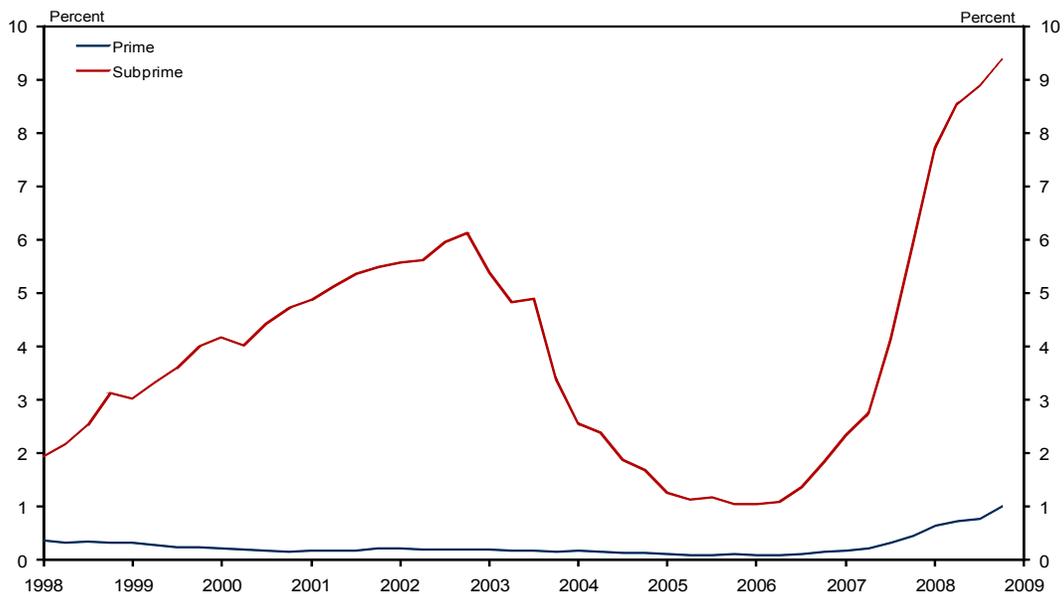
Table 1
Foreclosure Rates by Mortgage Type

Loan Type	Virginia		United States
	Percent in Foreclosure	National Rank	Percent in Foreclosure
Prime Fixed-Rate	0.46	46	1.05
Prime Adjustable-Rate	3.35	32	5.71
Subprime Fixed-Rate	3.59	46	6.22
Subprime Adjustable-Rate	15.96	24	22.18

Source: Mortgage Bankers Association (2008:Q4)/Haver Analytics

Figure 6 shows a time series of mortgage performance in Virginia. It shows the percentage of prime and subprime loans that are in foreclosure since 1998. The red line is the subprime performance. These loans did poorly during the previous recession, performed better starting in 2003, and then their performance rapidly deteriorated starting in late 2006. Prime loans performed relatively well during the previous recession, but their performance has also rapidly deteriorated in the last two years.

Figure 6
Foreclosure Inventory Rate by Type
Virginia



Source: Mortgage Bankers Association (2008:Q4)/Haver Analytics

Table 2
Prime Mortgage Delinquency Rates

Geographic Area	Percent 90+ Days Past Due	National Rank	Percent in Foreclosure	National Rank
District of Columbia	1.37	18	1.13	28
Maryland	1.73	11	1.33	19
North Carolina	1.30	23	0.70	47
South Carolina	1.35	20	1.37	17
Virginia	1.28	24	1.01	37
West Virginia	1.31	22	1.19	23
United States	1.86	-	1.88	-

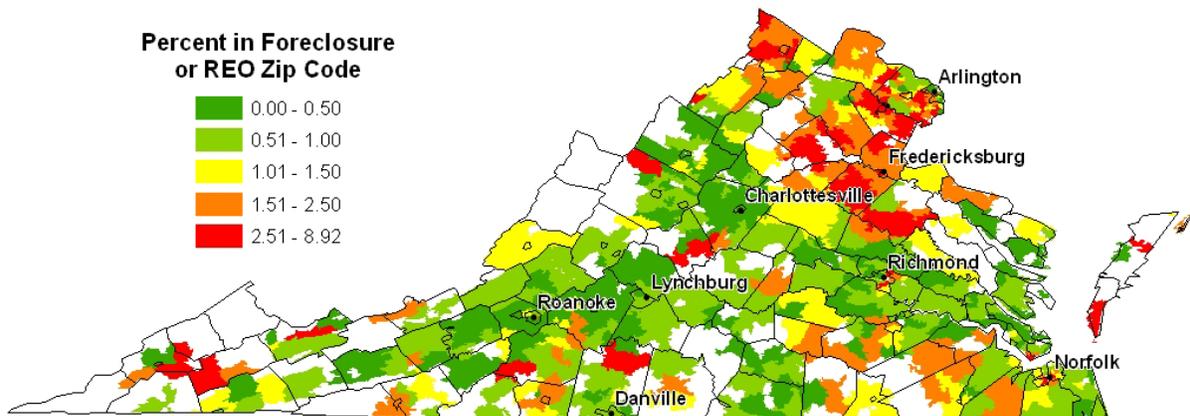
Source: Mortgage Bankers Association (2008:Q4)/Haver Analytics

Prime Loans

As already noted, prime mortgages account for the majority of the outstanding loans in both Virginia and the United States, and perform better than subprime mortgages. Table 2 shows foreclosure rates on prime loans within the 5th District. Virginia's rate is below the national rate.

While Virginia's performance is better than average, there is a lot of variation within the Commonwealth. Figure 7 reports the prime foreclosure rates at the zip code level. Foreclosure rates are noticeably higher in the Northern Virginia region. As of December 2008, 63.9 percent of the prime foreclosures in the state were located in the Winchester and Washington, D.C. MSAs.¹² As was discussed earlier, this region had the greatest increase and then fall in house prices. More analysis of this region is provided later.

Figure 7
Percentage of Owner-Occupied Prime Loans in Foreclosure or REO¹³



Notes: FHA & VA loans are included in the count of prime loans. Uncategorized zip codes have less than 100 loans or no data available.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008), Mortgage Bankers Association (2008:Q4)/Haver Analytics.

¹¹ Real Estate Owned (REO) properties are in the possession of the lender due to foreclosure or forfeiture.

¹² Part of this is likely due to the fact that many Alt-A loans are included in the prime category in the LPS definitions and we did not remove them for our prime calculations. Alt-A loans have performed worse than prime loans and are more concentrated in the Washington, DC and Winchester MSAs than the rest of the state.

Table 3
Subprime Mortgage Delinquency Rates

Geographic Area	Percent 90+ Days Past Due	National Rank	Percent in Foreclosure	National Rank
District of Columbia	8.85	24	13.24	13
Maryland	10.20	10	12.90	14
North Carolina	8.67	28	5.47	49
South Carolina	8.59	29	9.04	30
Virginia	8.70	26	9.40	25
West Virginia	9.18	19	6.45	45
United States	9.40	-	13.71	-

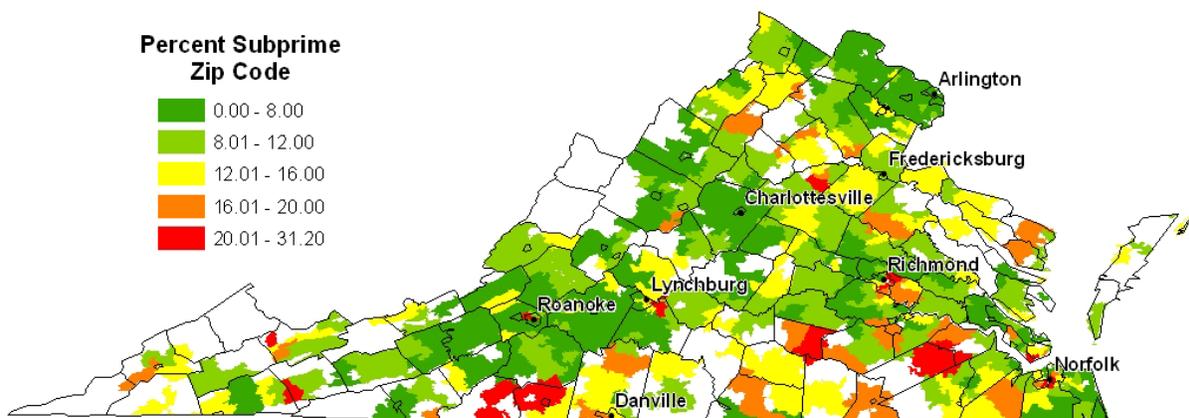
Source: Mortgage Bankers Association (2008:Q4)/Haver Analytics

Subprime Loans

As shown in Figure 5a, 8.8 percent of mortgages in Virginia are subprime. This ranks Virginia 38th among U.S. states for the prevalence of subprime loans and is below the national average of 11.7 percent. Table 3 reports the performance of these mortgages. The percentage of Virginia’s subprime mortgages in foreclosure is over 9 percent, which is lower than the national rate of nearly 13.7 percent. Like the rest of the country, Virginia has a large number of subprime loans that are over 90 days delinquent and presumably a number of these will end up in foreclosure.

Figure 8 shows the prevalence of subprime loans in each zip code in Virginia. Subprime loans are scattered across the state with no clear pattern emerging from the map. The areas with the highest prevalence of subprime mortgages are smaller, rural zip codes where there are not a lot of loans in the dataset. The highly populated areas with the highest concentrations of subprime loans are in the Danville (14.4 percent), Winchester (10.9 percent), and Virginia Beach (10.9 percent) metro areas.

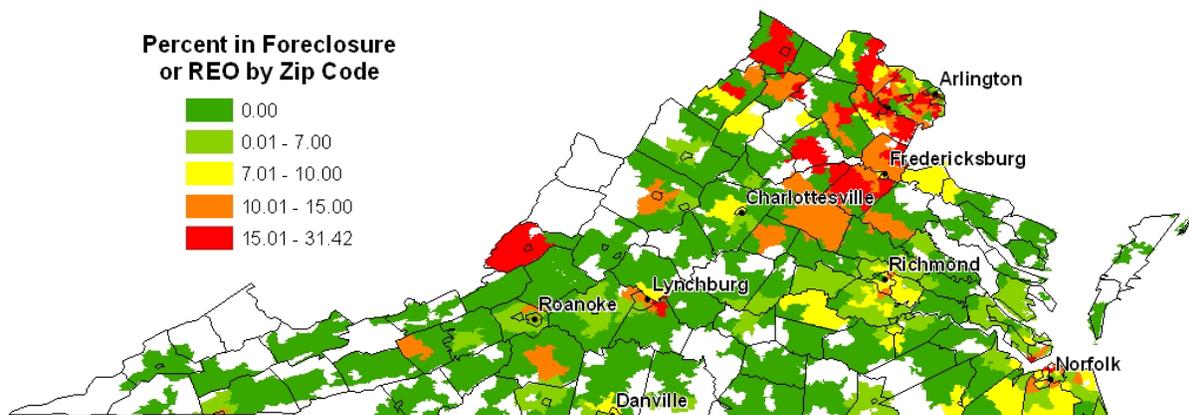
Figure 8
Percentage of Owner-Occupied Mortgages with Subprime Loans



Notes: FHA & VA loans are included in the count of prime loans. Uncategorized zip codes have less than 100 loans, less than 25 subprime loans, or have no data available.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008), Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Figure 9
Percentage of Owner-Occupied Subprime Loans
in Foreclosure or REO



Notes: FHA & VA loans are included in the count of prime loans. Uncategorized zip codes have less than 100 loans, less than 25 subprime loans, or have no data available.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008), Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Figure 9 reports the performance of owner-occupied subprime loans in Virginia according to the LPS data set. Unlike in Table 3, here we report loans that are in foreclosure or have been foreclosed upon but not yet sold (REO). As seen in Figure 9, foreclosure rates for subprime loans in Virginia also vary across the state, but Northern Virginia stands out as an area of concern. The subprime foreclosure rates in the Northern Virginia area (16.8 percent) and the Winchester MSA (17.0 percent) are noticeably higher than the other Virginia metro areas, and the fraction of subprime loans in foreclosure or REO in some zip codes is over 30 percent. As might be expected given the recent economic environment, the foreclosure/REO rate for subprime loans in Virginia increased from 8.2 percent to 11.0 percent between December 2007 and December 2008.

The Next Wave of Foreclosures?

As shown in Figures 5a and 5b, subprime loans make up a disproportionately large share of the properties in foreclosure. Going forward, there is concern that the next wave of foreclosures could come from Alt-A mortgages.¹⁴

Generally, borrowers of Alt-A loans have a better credit history than subprime borrowers and thus are more likely to be able to absorb declines in home equity. However, many Alt-A borrowers put little money down for their purchase and had interest-only or negative amortization features in the mortgage, in order to afford the payments for the first few years after purchase. In areas where property values have dropped, these loans are particularly likely to end up in negative equity, making foreclosure more likely.

One kind of Alt-A mortgage is a loan with a period where only interest payments are required. Using LPS data, Table 4 in Appendix A reports the fraction of mortgages that have interest-only characteristics in Virginia's MSAs. These mortgages are most prevalent in the Northern Virginia, where they account for 20.0 percent of mortgages. They account for 11.2 percent of mortgages

¹³ The MBA National Delinquency Survey and the LPS dataset do not have a separate category for Alt-A mortgages. These can be in either their prime or subprime category.

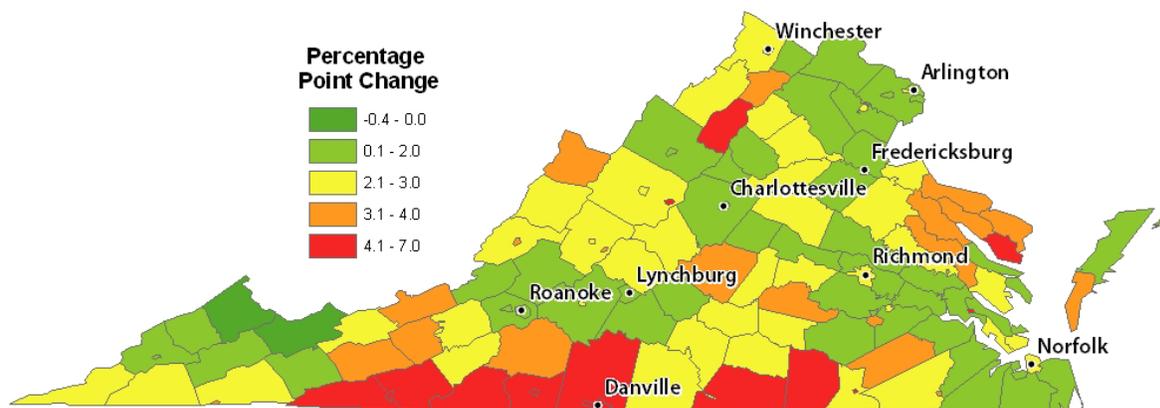
in Winchester. Outside of Northern Virginia, interest-only mortgages are less common. In Virginia Beach, Charlottesville, and Richmond they make up the 6 to 8 percent of all mortgages. In other MSAs, they are negligible.

Table 7 in Appendix A reports the performance of interest-only loans for Virginia MSAs. The 90-day-plus delinquency measure is about double what it is for prime mortgages in the state.¹⁵ Furthermore, and just like with prime and subprime mortgages, performance is worse in Northern Virginia than it is in the rest of Commonwealth. Tables 15-17 in Appendix A report performance numbers for localities within the three largest MSAs in Virginia. There is substantial variation in performance, particularly within Northern Virginia.

In conjunction with declining home prices, income loss can lead to a foreclosure, or at least an undesirable sale of a house. Many people with negative equity in their house still pay their mortgage.¹⁶ However, this is much harder for borrowers to do if they lose a job or have a large expense.

The unemployment rate is one measure of whether the income of borrowers in a community has dropped. The unemployment rate has increased nationally and Virginia is no exception. Figure 10 shows the change in unemployment rate from December 2007 to December 2008 in each of Virginia's counties and cities. By this criterion, this biggest area of concern is the Danville metro area, where the unemployment rate increased 5.6 percentage points between December 2007 and December 2008. Not surprisingly, this area ranks the worst among Virginia MSAs for performance of prime mortgage loans. Interestingly though, subprime loans in the Danville metro area are performing better than those in other MSAs. Still, looking ahead the large increase in unemployment should hurt housing prices as well as make it more difficult for borrowers to handle payments, so mortgage performance should deteriorate further in this community.

Figure 10
Change in the Unemployment Rate

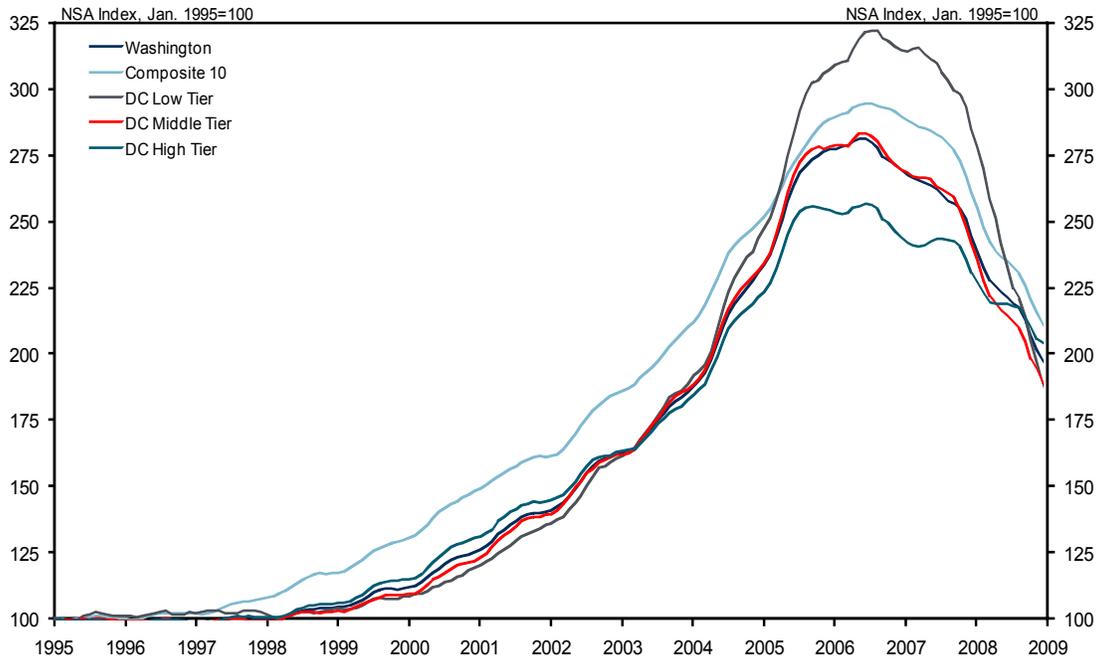


Notes: Twelve month change is between December 2007 and December 2008.
Source: Bureau of Labor Statistics

¹⁴ Note that interest-only loans are included in the prime loan count.

¹⁵ See [Foote, Gerardi and Willen \(2008\)](#).

Figure 11
S&P/Case-Shiller Home Price Index
Washington-Arlington-Alexandria MSA



Source: S&P/Case-Shiller & Haver Analytics

Section 4: Northern Virginia

As noted, the worst mortgage performance in the Commonwealth is in the northern region, where several factors are at work. Figure 11 shows the S&P/Case-Shiller Home Price Index for the Washington, D.C. MSA, which includes Northern Virginia. The metro area's house prices grew rapidly until 2006. From January 2004 to May 2006 house prices grew by almost 50 percent. Since then prices have dropped 30.1 percent through December 2008.

This big increase and drop in prices is even more pronounced among the least valuable houses. Figure 11 reports the S&P/Case-Shiller Home Price Index for Washington, D.C. and for the 10 largest cities (Composite 10) in the MSA. For D.C., the figure also shows the changes in prices for three subsets of houses. The low tier is the bottom third of houses as measured by value, the middle tier is the middle third, and the high tier is the top third. The low tier of houses increased and then dropped the most in price. Presumably, this tier includes many of the subprime mortgages, so the drop in prices would explain why so many of them have gone into default.

With the significant decline in house prices in Northern Virginia, the performance of mortgages has been markedly worse in this area. Northern Virginia has about the same proportion of subprime loans (7.1 percent) as the Commonwealth (7.2 percent), but the foreclosure rate of Northern Virginia loans (8.1 percent) is much higher than that of the Commonwealth (5.4 percent). Additionally, there is also noticeable variation in mortgage performance within northern Virginia. The outer parts of the metropolitan area, in particular, Prince William County

and Manassas City, have performed much worse than the rest of Northern Virginia. This is particularly evident in the subprime numbers in Table 14 in Appendix A, but it can also be seen in Table 7 and on a smaller scale in the prime numbers in Table 10.

There is some evidence that underwriting was weaker in this region. For example, proportionally fewer subprime loans in Northern Virginia were originated with the borrower providing full documentation. In Northern Virginia, 11.9 percent of the subprime loans were originated with little or no documentation, as opposed to 5.1 percent for the rest of Virginia.¹⁷

Section 5: Summary

Mortgages are performing better in Virginia than nationally, but there are large differences across the Commonwealth. Northern Virginia has had the worst performance, mainly due to the regions large increase and then ensuing drop in house prices. Price movements in the rest of the state have been much less volatile. Still, unemployment has increased dramatically throughout the Commonwealth, and in Danville in particular, so we should see further deterioration in mortgage performance going forward.

For information on foreclosure prevention, please visit the Richmond Fed's Foreclosure Center at: http://www.richmondfed.org/community_development/foreclosure_resource_center/.

¹⁶ This number was calculated from existing loans in the LPS dataset as of December 2008. This probably understates the number since many subprime loans that have been foreclosed upon and the underlying house then sold are not in the December data.

Appendix A: Metropolitan Area Data

Table 4 General Housing Statistics

Geographic Area	Housing Units					Percent of Owner-Occupied			
	Total	Vacant	Occupied	Owner-Occupied		Prime Loan	Subprime Loan	Adjustable Rate	Interest Only
				Total	With a Mortgage				
Blacksburg	68,313	6,224	62,089	38,362	24,314	94.26	5.74	6.44	1.83
Charlottesville	87,307	9,627	77,680	50,613	33,591	95.17	4.83	13.29	7.46
Danville	52,634	8,276	44,358	31,061	17,577	85.57	14.43	5.47	0.83
Harrisonburg	46,850	4,222	42,628	26,532	16,410	93.67	6.33	6.23	3.05
Kingsport-Bristol*									
Entire MSA	145,334	15,368	129,966	96,003	50,432	-	-	-	-
Virginia Portion	-	-	-	-	-	89.62	10.38	5.64	1.54
Lynchburg	107,553	11,123	96,430	68,913	42,988	91.67	8.33	7.02	3.13
Richmond	511,135	42,091	469,044	322,818	239,657	89.72	10.28	11.53	6.08
Roanoke	140,003	12,441	127,562	95,155	62,733	91.79	8.21	6.66	2.44
Virginia Beach-Norfolk	678,451	54,756	623,695	405,970	313,553	89.11	10.89	12.18	7.68
District of Columbia**									
Entire MSA	2,133,143	175,039	1,958,104	1,329,204	1,108,999	-	-	-	-
Virginia Portion	-	-	-	-	-	92.94	7.06	28.35	20.01
Winchester	52,319	8,035	44,284	32,470	22,420	89.10	10.90	15.91	11.24
Virginia	3,273,206	340,972	2,932,234	2,038,098	1,490,034	91.18	8.82	18.46	12.18
Fifth District	12,904,601	1,661,582	11,243,019	7,766,133	5,395,627	90.17	9.83	15.02	8.68

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Housing units are 2007 estimates from the Census Bureau. Mortgage estimates are Federal Reserve Bank of Richmond calculations using data from Lender Processing Services (LPS) Applied Analytics (December, 2008) and Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Definitions of the metropolitan areas are provided in Appendix B.

MSAs that have two different lines of data reported are due to the fact that they cross state lines. The Census Bureau data is only available at the MSA level and therefore cannot be reported at the state-specific level as the LPS data can.

* Kingsport-Bristol MSA includes counties in both Virginia and Tennessee. Numbers reported for the Bristol category are for the Virginia portion only.

** See Appendix B for specific locality definitions.

Table 5
Owner-Occupied Prime Loan Statistics

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Blacksburg	0.55	0.31	0.14	0.94	0.33	0.22
Charlottesville	0.41	0.12	0.06	0.79	0.31	0.16
Danville	1.25	0.39	0.62	2.40	0.55	0.41
Harrisonburg	0.19	0.11	0.13	0.80	0.27	0.18
Bristol*	0.80	0.36	0.33	1.38	0.52	0.25
Lynchburg	0.83	0.29	0.19	1.66	0.37	0.24
Richmond	0.91	0.25	0.14	1.74	0.50	0.28
Roanoke	0.73	0.28	0.26	1.40	0.32	0.24
Virginia Beach-Norfolk	0.72	0.26	0.13	1.59	0.56	0.35
Northern Virginia**	0.72	0.55	0.73	1.63	1.09	1.24
Winchester	0.89	0.58	0.75	2.21	1.21	1.26
Virginia	0.75	0.40	0.43	1.61	0.77	0.74
Fifth District	0.96	0.50	0.37	1.97	0.89	0.52

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008) and Mortgage Bankers Association (2008:Q4), and Haver Analytics.

* Bristol includes only those zip codes that fall within Virginia.

** See Appendix B for specific locality definitions.

Table 6
Owner-Occupied Subprime Loan Statistics

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Blacksburg	3.29	4.12	2.88	11.64	2.65	2.65
Charlottesville	7.74	2.80	3.23	14.25	4.84	3.70
Danville	9.47	2.23	3.62	11.34	3.44	3.44
Harrisonburg	4.25	4.72	1.42	17.54	2.92	1.17
Bristol*	3.85	3.85	5.49	12.08	2.68	4.03
Lynchburg	6.59	2.84	2.54	14.48	4.76	2.86
Richmond	7.97	2.71	1.87	17.52	4.25	3.37
Roanoke	8.12	1.92	3.32	16.27	3.39	2.82
Virginia Beach-Norfolk	7.08	3.04	1.94	15.33	4.57	3.34
Northern Virginia**	9.62	4.92	8.91	16.20	7.18	9.61
Winchester	6.59	3.04	7.77	16.56	7.96	9.03
Virginia	8.06	3.54	4.65	16.10	5.37	5.64
Fifth District	8.36	4.41	3.71	16.40	6.32	4.73

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008) and Mortgage Bankers Association (2008:Q4)/Haver Analytics.

*Bristol includes only those zip codes that fall within Virginia.

** See Appendix B for specific locality definitions.

Table 7
Owner-Occupied Interest Only Loan Statistics

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Charlottesville	0.65	0.26	0.13	1.76	0.81	0.47
Harrisonburg	1.19	0.40	0.00	3.14	0.90	0.45
Lynchburg	0.95	0.32	0.79	2.85	1.33	1.33
Richmond	1.25	0.59	0.61	3.43	1.54	1.32
Roanoke	0.86	0.25	0.74	2.70	0.99	0.99
Virginia Beach-Norfolk	1.26	0.54	0.35	3.41	1.54	1.12
Northern Virginia**	1.68	1.42	2.16	3.54	3.06	3.50
Winchester	1.98	2.05	2.97	5.41	4.85	5.49
Virginia	1.58	1.21	1.75	3.54	2.70	2.95
Fifth District	1.50	1.13	1.14	3.78	2.88	2.08

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008).

* Bristol includes only those zip codes that fall within Virginia.

** See Appendix B for specific locality definitions.

Table 8
Unemployment Rates

Geographic Area	Unemployment Rate	Percentage Point Increase from December 2007
Blacksburg	6.1	2.5
Charlottesville	4.1	1.6
Danville	11.1	5.0
Harrisonburg	4.4	1.8
Kingsport-Bristol	6.5	1.9
Lynchburg	5.3	1.9
Richmond	5.6	2.2
Roanoke	5.1	1.8
Virginia Beach-Norfolk	5.4	1.9
Washington, D.C.	4.7	1.7
Winchester	6.3	3.1
Virginia	5.1	1.9
Fifth District	6.6	2.3

Source: Census Bureau (December, 2008)

Appendix B: Selected County Data – Selected MSAs

Table 9
Owner-Occupied Prime Loan Statistics
Richmond MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Caroline County	1.42	0.75	0.99	3.25	1.22	1.55
Chesterfield County	0.68	0.21	0.10	1.52	0.42	0.18
Hanover County	0.25	0.11	0.03	0.94	0.27	0.11
Henrico County	0.68	0.16	0.07	1.25	0.36	0.18
Louisa County	0.99	0.31	0.21	2.05	0.74	0.40
Powhatan County	0.33	0.15	0.11	1.28	0.32	0.32
Colonial Heights City	1.36	0.30	0.09	1.99	0.37	0.17
Petersburg City	2.23	0.46	0.22	3.77	0.84	0.66
Richmond City	2.13	0.62	0.36	3.27	1.07	0.61

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008) and Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 10
Owner-Occupied Prime Loan Statistics
Washington, D.C. MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Arlington County	0.25	0.19	0.11	0.44	0.38	0.30
Fairfax County	0.49	0.42	0.46	1.23	0.89	0.91
Loudoun County	0.76	0.47	0.81	1.70	1.03	1.02
Prince William County	1.43	1.23	1.78	2.83	2.03	2.83
Alexandria City	0.25	0.15	0.22	0.61	0.50	0.44
Fairfax City	0.65	0.42	0.37	1.33	1.00	0.92
Falls Church City	0.23	0.27	0.23	0.45	0.36	0.50
Fredericksburg City	1.08	0.44	0.82	1.89	1.59	0.98
Manassas City	1.86	1.63	3.35	3.38	2.40	4.18

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008 and, Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 11
Owner-Occupied Prime Loan Statistics
Virginia Beach-Norfolk MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Gloucester County	0.48	0.27	0.03	1.45	0.42	0.36
Isle of Wight County	0.68	0.27	0.16	1.17	0.51	0.21
James City County	0.33	0.08	0.01	0.84	0.19	0.17
Mathews County	0.46	0.15	0.31	2.16	0.15	0.00
York County	0.14	0.09	0.00	0.39	0.12	0.10
Chesapeake City	0.76	0.25	0.16	1.59	0.51	0.36
Hampton City	0.91	0.29	0.14	1.97	0.42	0.26
Newport News City	0.79	0.26	0.20	1.70	0.55	0.42
Virginia Beach City	0.55	0.21	0.06	1.32	0.53	0.30

Notes: FHA & VA loans as well as interest-only loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008 and, Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 12
Owner-Occupied Subprime Loan Statistics
Richmond MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Caroline County	10.59	2.97	8.47	22.63	5.26	7.89
Chesterfield County	7.42	2.57	1.48	15.76	4.91	2.57
Hanover County	7.08	1.09	1.09	19.71	3.28	2.55
Henrico County	8.06	3.07	1.46	20.58	3.88	2.23
Louisa County	8.20	2.19	2.73	16.31	7.80	5.67
Powhatan County	1.75	0.88	1.75	13.19	2.20	1.10
Colonial Heights City	7.86	1.43	0.71	13.64	4.55	1.82
Petersburg City	7.24	3.34	1.67	15.07	4.11	1.71
Richmond City	9.62	3.71	1.94	17.59	4.06	5.83

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008 and, Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 13
Owner-Occupied Subprime Loan Statistics
Virginia Beach-Norfolk MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Gloucester County	8.23	4.43	1.90	19.69	3.94	2.36
Isle of Wight County	9.80	2.61	3.92	16.26	4.07	3.25
James City County	5.43	1.45	0.00	10.48	3.49	1.31
Mathews County	19.23	3.85	0.00	26.09	8.70	4.35
York County	5.62	0.56	0.56	4.64	4.64	1.32
Chesapeake City	8.93	2.95	1.97	17.51	5.67	3.58
Hampton City	6.92	2.81	1.60	13.84	3.96	3.46
Newport News City	5.85	3.06	2.43	12.49	3.63	3.75
Virginia Beach City	7.14	3.26	1.06	16.56	5.03	2.28

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008 and, Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 14
Owner-Occupied Subprime Loan Statistics
Washington, D.C. MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Arlington County	7.79	2.60	3.25	10.51	5.06	4.67
Fairfax County	8.00	4.47	7.52	13.90	7.04	8.73
Loudoun County	9.62	4.73	9.02	15.38	6.91	7.73
Prince William County	12.05	6.17	13.12	16.89	8.57	14.05
Alexandria City	5.65	5.98	2.33	10.73	4.21	7.28
Fairfax City	6.14	2.63	8.77	6.74	10.11	6.74
Falls Church City	5.26	2.63	2.63	8.82	5.88	8.82
Fredericksburg City	N/A	N/A	N/A	N/A	N/A	N/A
Manassas City	14.08	9.09	13.49	23.23	8.66	14.17

Notes: N/A means there are too few loans to accurately calculate this statistic.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008) and Mortgage Bankers Association (2008:Q4)/Haver Analytics.

Table 15
Owner-Occupied Interest Only Loan Statistics
Richmond MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Caroline County	3.82	2.35	3.53	7.54	4.26	6.89
Chesterfield County	1.28	0.66	0.44	2.98	1.24	0.91
Hanover County	0.88	0.00	0.44	2.86	1.18	1.01
Henrico County	0.86	0.54	0.32	3.32	1.41	0.66
Louisa County	1.96	0.00	1.47	2.67	2.14	2.67
Powhatan County	0.00	0.00	1.23	1.37	0.68	2.05
Colonial Heights City	N/A	N/A	N/A	N/A	N/A	N/A
Petersburg City	1.82	0.91	0.00	7.14	1.02	1.02
Richmond City	1.51	0.76	0.86	4.17	1.91	2.50

Notes: N/A means there are too few loans to accurately calculate this statistic. FHA & VA loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008)

Table 16
Owner-Occupied Interest Only Loan Statistics
Virginia Beach-Norfolk MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Gloucester County	1.32	0.66	0.00	3.55	1.42	1.42
Isle of Wight County	2.14	1.22	0.61	4.75	1.69	1.36
James City County	0.68	0.23	0.00	1.90	0.63	0.38
Mathews County	N/A	N/A	N/A	N/A	N/A	N/A
York County	0.52	0.00	0.00	0.85	0.28	0.00
Chesapeake City	1.55	0.62	0.54	3.94	1.52	1.30
Hampton City	2.32	0.36	0.36	5.22	2.09	1.46
Newport News City	1.60	0.80	0.67	3.34	1.43	0.79
Virginia Beach City	1.03	0.37	0.18	2.96	1.26	0.88

Notes: N/A means there are too few loans to accurately calculate this statistic. FHA & VA loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008)

Table 17
Owner-Occupied Interest Only Loan Statistics
Washington, D.C. MSA

Geographic Area	December, 2007			December, 2008		
	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO	Percent 90+ Days Past Due	Percent in Foreclosure	Percent in REO
Arlington County	0.53	0.39	0.37	1.08	0.79	0.77
Fairfax County	1.19	1.22	1.45	2.86	2.72	2.70
Loudoun County	1.45	0.93	1.76	3.03	2.35	2.35
Prince William County	3.09	2.82	4.55	5.77	5.27	7.19
Alexandria City	0.57	0.44	0.41	1.18	1.20	1.46
Fairfax City	1.41	1.19	1.48	2.49	2.33	3.21
Falls Church City	0.80	1.33	0.80	1.49	1.79	2.68
Fredericksburg City	2.45	0.74	3.43	4.81	3.48	2.14
Manassas City	4.97	4.63	8.26	6.98	8.44	12.12

Notes: N/A means there are too few loans to accurately calculate this statistic. FHA & VA loans are included in the count of prime loans.

Source: Federal Reserve Bank of Richmond estimates using data from Lender Processing Services (LPS) Applied Analytics (December, 2008)

Appendix B

MSA Definitions

1. **Blacksburg MSA** – Giles County, Montgomery County, Pulaski County, Radford city
2. **Charlottesville MSA** – Albemarle County, Fluvanna County, Greene County, Nelson County, Charlottesville city
3. **Danville MSA** - Pittsylvania County, Danville city
4. **Harrisonburg MSA** - Rockingham County, Harrisonburg city
5. **Kingsport-Bristol MSA** - Hawkins County, TN; Sullivan County, TN; Scott County, VA; Washington County, VA; Bristol city, VA (Virginia Portion includes only VA counties).
6. **Lynchburg MSA** - Amherst County, Appomattox County, Bedford County, Campbell County, Bedford city, Lynchburg city
7. **Richmond MSA** - Amelia County, Caroline County, Charles City County, Chesterfield County, Cumberland County, Dinwiddie County, Goochland County, Hanover County, Henrico County, King and Queen County, King William County, Louisa County, New Kent County, Powhatan County, Prince George County, Sussex County, Colonial Heights city, Hopewell city, Petersburg city, Richmond city
8. **Roanoke MSA** - Botetourt County, Craig County, Franklin County, Roanoke County, Roanoke city, Salem city
9. **Virginia Beach-Norfolk MSA** - Currituck County, NC; Gloucester County, VA; Isle of Wight County, VA; James City County, VA; Mathews County, VA; Surry County, VA; York County, VA; Chesapeake city, VA; Hampton city, VA; Newport News city, VA; Norfolk city, VA; Poquoson city, VA; Portsmouth city, VA; Suffolk city, VA; Virginia Beach city, VA; Williamsburg city, VA
10. **Washington, D.C. MSA** - District of Columbia, DC; Calvert County, MD; Charles County, MD; Prince George's County, MD; Arlington County, VA; Clarke County, VA; Fairfax County, VA; Fauquier County, VA; Loudoun County, VA; Prince William County, VA; Spotsylvania County, VA; Stafford County, VA; Warren County, VA; Alexandria city, VA; Fairfax city, VA; Falls Church city, VA; Fredericksburg city, VA; Manassas city, VA; Manassas Park city, VA; Jefferson County, WV (Northern Virginia includes all Virginia counties listed here)
11. **Winchester MSA** - Frederick County, VA; Winchester city, VA; Hampshire County, WV

Appendix C

Loan Processing Services, Inc. Applied Analytics Mortgage Data (LPS Data) does not have as complete coverage of subprime loans as it does of prime loans. To compensate for this, we scaled the LPS subprime and prime data for each locality by common factors such that the LPS totals matched the MBA data at the state level. While this method of dealing with LPS's underrepresentation of loans is far from perfect, it only impacts the figures and tables that report the prevalence of subprime loans within geographic areas of Virginia. It has no impact on the prime or subprime performance numbers.