Tennessee Housing Development Agency

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Identifying Home Loan Trends in 2016 in Tennessee from Home Mortgage Disclosure Act (HMDA) Data

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EXECUTIVE SUMMARY

- In 2016, there were 350,490 home purchase, refinancing and home improvement loan applications for one- to four-family dwellings in Tennessee. The loan applications were 15 percent and originations were 12 percent higher than in 2015. While volume increased, both loan applications and loan originations remained lower than the 2007 peak levels.
- Loan applications were at 68 percent of the 2007 peak and loan originations were at 80 percent of the 2007 peak.
- For the second year in a row, Quicken Loans originated the highest number of loans, followed by Mortgage Investors Group (MIG), Regions Bank and Wells Fargo. Combined, these four originated 16 percent of all 2016 Tennessee loans.
- In 2016, 13 percent of all first-lien home purchase loans on owner-occupied one- to four-family dwellings originated in the state were in Davidson County, followed by Shelby County with nearly 10 percent and Knox County with nine percent.
- In 2016, 55 percent of all first-lien home purchase loans originated for one- to four-family owner-occupied homes were conventional, while 25 percent were Federal Housing Administration (FHA)-insured, 12 percent were insured by the Veterans Administration (VA) and nearly eight percent were Farm Services Agency (FSA)/Rural Housing Services (RHS)-insured.
- Conventional home purchase loan originations, while increased from the lowest level of 2010, nearly 55 percent of all home purchase loan originations, was lower compared to 2007 when more than 83 percent of all home purchase loans originated were conventional loans. In 2016, 25 percent of all home purchase loans originated were Federal Housing Administration (FHA)-insured, 12 percent were insured by the Veterans Administration (VA) and nearly eight percent were Farm Services Agency (FSA)/Rural Housing Services (RHS)-insured.
- Minority and lower income borrowers used nonconventional government-insured (FHA, VA and/or FSA/RHS insured) loans more often than conventional loans. In 2016, 75 percent of all African-American/black borrowers and 59 percent of all Hispanic or Latino borrowers used nonconventional loans for home purchase, while in the same year, only 45 percent of all home purchase loans were nonconventional. Low-income borrowers also mostly used nonconventional loans in 2016.
- In 2016, the average loan amount for VA-insured loans was almost as high as the average conventional loan amount. The applicants who used VA insurance also had higher average incomes than borrowers with FHA-insured and FSA/RHS-insured loans.
- In 2016, the denial rate of all borrowers, regardless of race, who applied for a home purchase loan (including conventional and unconventional) was 10.5 percent in Tennessee. With 17.3 percent, African American borrowers had the highest denial rate in 2016. Multi-racial and other minority applicants and experienced slight increases from their denial rates compared to 2015.
- In 2016, THDA funded 12.2 percent of all comparable FHA-insured first lien home purchase loans in Tennessee, which was three percentage points lower than THDA's share in the FHA-insured mortgage loans market in 2015. This was mainly the result of a 12 percent decline in the FHA-insured THDA loans in calendar year 2016 from the previous year compared to nine percent annual increase in THDA eligible FHA-insured loans in the larger Tennessee market.

INTRODUCTION

This report provides an overview of mortgage market activity and lending patterns in Tennessee using the Home Mortgage Disclosure Act (HMDA) data from 2007 until 2016 and compares different demographic groups and lender types. All the information provided in this report is related to the mortgage loan applications and mortgages originated in Tennessee, unless noted.

What is HMDA?

The HMDA data are the most comprehensive source of publicly available information on the mortgage market. The HMDA data are useful in determining whether financial institutions are serving the housing needs in their communities and in identifying possible discriminatory lending patterns. HMDA data can be used in identifying overall market trends in residential financing. However, it does not include all residential loan applications because some institutions are exempt from HMDA reporting requirements.[1]

The HMDA requires many depository and non-depository lenders to collect and disclose information about housing-related loans (including home purchase, home improvement and refinancing) and applications for those loans in addition to applicants' and borrowers' income, race, ethnicity and gender. The law governing HMDA was enacted in 1975, initially falling within the regulatory authority of the Federal Reserve Board. In 2011, regulatory authority was transferred to the Consumer Financial Protection Bureau.[2] Whether an institution is required to report depends on its asset size, its location, and whether it is in the business of residential mortgage lending.[3]

In this report, we also looked at Tennessee Housing Development Agency's (THDA's) share in Tennessee home loans market in 2016. THDA does not report to HMDA because THDA is not the direct lender, but the lenders originating the loans for THDA borrowers report to HMDA. We compared the home purchase loans reported in HMDA data files in Tennessee in 2016 with the THDA loan portfolio.

[1] According to Bhutta, Laufer and Ringo (2017), based on the consumer credit records maintained by Equifax, about 8.4 million first-lien home-purchase and refinance loans were originated nationwide during 2016, compared with nearly 7.7 million first-lien home purchase and refinance loans for one- to four-family properties reported under HMDA. Thus, the number of first-lien home-purchase and refinance loans in the HMDA data is approximately 90 percent of the number reported in consumer credit files. See Bhutta, N, Steven Laufer, and Daniel R. Ringo (2017) "Residential Mortgage Lending in 2016: Evidence from the Home Mortgage Disclosure Act Data," forthcoming in the *Federal Reserve Bulletin*, accessed on 10/11/2017 at https://www.federalreserve.gov/publications/files/2016_HMDA.pdf

[2] History of HMDA, http://www.ffiec.gov/hmda/history2.htm

[3] Reporting institutions are those banks, credit unions or saving associations (institutions) with a home or branch office in a Metropolitan Statistical Area (MSA); whose total assets exceeded the coverage threshold on the preceding December 31; and that originated at least one home purchase loan or refinancing of a home purchase loan secured by a first lien on a one- to four-family dwelling, in the preceding calendar year. Beginning in 2015, the asset exemption threshold for depository institutions is $44 million for data collection and the exemption thresholds for non-depository institutions was unchanged at, $10 million. The institutions that are not federally insured or regulated are exempt from reporting. Also, the originated loans that are not insured, guaranteed or supplemented by a federal agency are not reported. For more information who reports HMDA data, see: https://www.ffiec.gov/hmda/reporter.htm

PART A. TENNESSEE HMDA DATA ANALYSIS

I. MORTGAGE APPLICATIONS AND ORIGINATIONS

In 2016, 1,105 institutions reported data on 350,490 home mortgage applications in Tennessee. These loan applications (including applications that were closed by the lender for incompleteness or were withdrawn by the applicant before a decision was made and the loans made in previous year and loans purchased by reporting institutions during the reporting year, which may be originated at any point in time) in 2016 led to 174,965 loan originations, a 58 percent approval rate[4], in the amount of nearly $34 billion. Both the number of applications and originations in 2016 were higher than they were in 2015. As shown in Table 1, 2016 saw a 12 percent increase in the number of loans originated from 2015. Similarly, the total dollar value of loans originated increased by 17 percent compared to 2015. Tennessee is roughly on track with the national picture, where the total number of originated loans of all types and purposes increased by 13 percent.

Table 1. Number of Reporting Institutions, Total Number of Applications and Originations and Dollar Value of Loans Originated by Year, 2007-2016, Tennessee

Activity Year	Reporting Institutions	Loan Applications	Loans Originated	Dollar ($1,000) Value of Loans Originated
2007	1,268	512,117	217,392	$29,398,208
2008	1,185	365,839	163,188	$23,883,211
2009	1,126	406,028	187,776	$29,506,366
2010	1,034	335,917	153,282	$24,100,292
2011	983	304,377	137,943	$21,726,542
2012	1,012	373,362	180,686	$29,927,384
2013	1,053	358,454	172,612	$28,097,932
2014	1,032	262,821	130,220	$22,211,166
2015	1,060	305,114	155,616	$29,040,173
2016	1,105	350,490	174,965	$33,998,024

In the last decade, Tennessee witnessed only three years when the loan origination was higher than the current level: 2007, 2009 and 2012. In 2007, the housing market was still booming. In 2009 and 2012, the recovery efforts created a refinancing expansion. Excluding refinancing and home improvement loans, as well as loans for multifamily and manufactured homes, the number of loans originated in 2016 was the highest volume since the housing market crash in 2008.

In 2016, 28 financial institutions originated close to 50 percent of all the loans originated in the state. In 2016, Quicken Loans originated the highest number of loans followed by Mortgage Investors Group (MIG), Regions Bank and Wells Fargo. This is the second year in a row of this top four ranking order. Combined, these four institutions originated 16 percent of all loans originated in Tennessee in 2016. Of

[4] Excluding the applications withdrawn by applicant and files closed for incompleteness.

1,105 institutions reporting to HMDA, 98 institutions did not have any loans originated.[5] Wells Fargo reported the highest number of loans applications in 2016, but only 25 percent of those reported loans were originated in 2016 and 58 percent of reported loan applications by Wells Fargo were originated previously and purchased in 2016. Mortgage Investors Group (MIG) was among the top 10 institutions with the highest number of loans originated in the 10-year period in Tennessee. MIG has been the top originating agent of Tennessee Housing Development Agency (THDA) loans for over 10 years.

II. HOME PURCHASE VERSUS REFINANCE[6]

According to HMDA data, in 2016, 331,109 home purchase, refinancing and home improvement loan applications for one- to four-family dwellings were submitted[7] to financial institutions in Tennessee. In the same year, there were an additional 633 reported loan applications for multifamily dwellings and 18,748 applications for manufactured homes.

In 2016, the annual increase in loan applications and originations reflect the increases in both refinancing and home purchase activities. In the years following the financial crisis, declining interest rates encouraged mortgage borrowers to refinance their previously high interest rate loans. In 2009 and 2012[8], for example, 63 percent of all loans originated in Tennessee were for refinance purposes. As interest rates started increasing from their historically low levels, refinance activity slowed down, and home purchase mortgages increased. In 2016, the number of refinance loans originated for one- to four-family dwellings increased by 13 percent from the previous year, and accounted for 40 percent of all loans originated during the year. Similarly, the number of home purchase loans originated for one- to four-family dwellings increased by 11 percent in 2016 compared to 2015, and accounted for 54 percent of all loans originated for one- to four-family dwellings.

[5] Institutions also report the loans they purchase during the calendar year that were originated by other lenders. It is also possible that some lenders had loan applications, but those were denied or withdrawn by the borrower and were not originated.
[6] First lien owner-occupied, one- to four-family mortgage loans originated for home purchase and refinance purposes in 2015 and 2016 by county can be found in Appendix A.
[7] That number also includes the loans originated in the previous years and purchased by the financial institutions during the year, and preapproval requests.
[8] These were the peak years for refinance loan origination in Tennessee in the 10-year period.

Figure 1. The Number of Mortgage Loans Originated, 1-4 Family Dwellings, 2007-2016, Tennessee

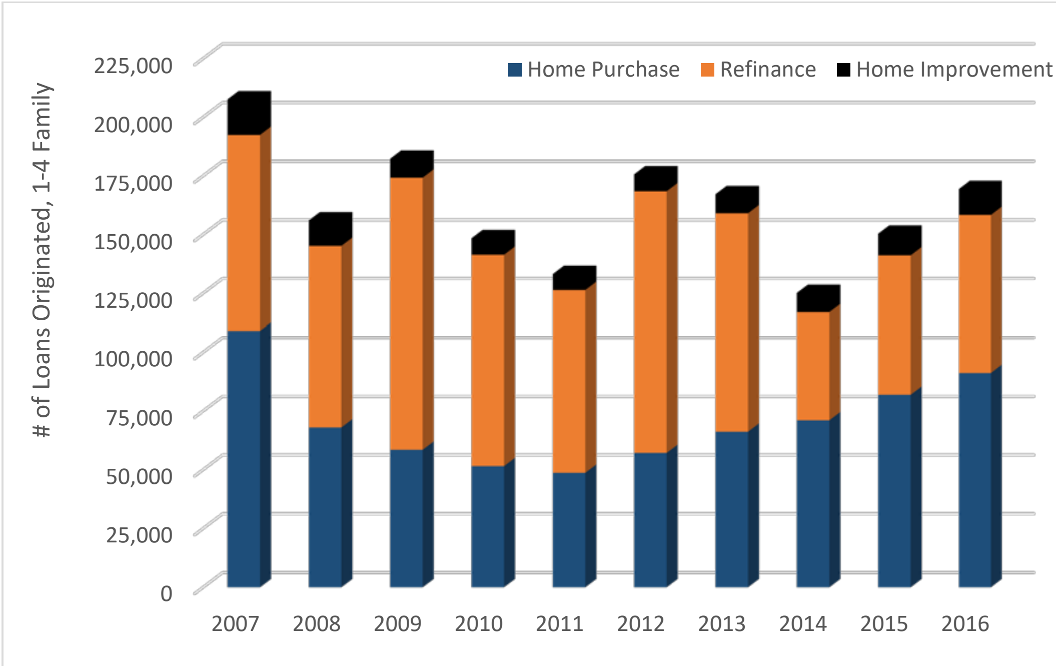
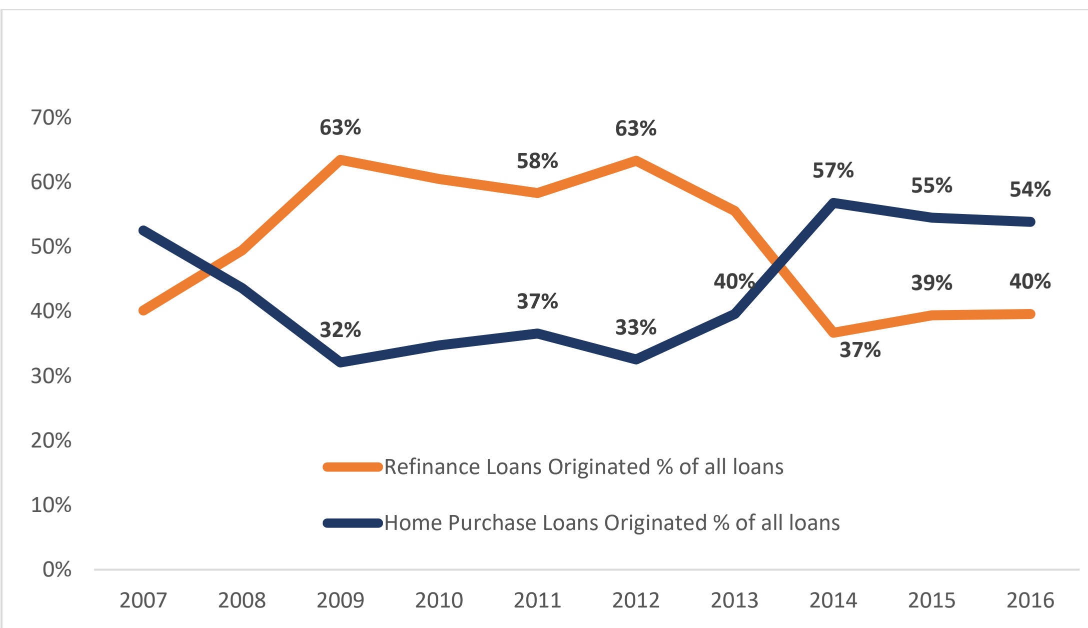


Figure 2. The Percent of Home Purchase and Refinance Mortgage Loan Originations in Total Loan Originations, 1-4 Family Dwellings, 2007–2016, Tennessee



In Table 2, the number of loans reported to HMDA and various types of action taken by the financial institutions are separated for one- to four-family, manufactured and multifamily dwellings, and the loans for one- to four-family dwellings are further separated based on the loan purpose (purchase, refinance and home improvement).

Table 2. Total Loan Applications and Action Taken by the Financial Institutions, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1-4 Family										
Home Purchase										
Applications*	208,406	128,363	118,638	103,839	98,742	113,508	128,899	126,868	140,447	156,869
Originated	109,089	68,014	58,509	51,531	48,691	57,175	66,207	71,069	81,942	91,226
Denied	22,986	13,178	9,544	8,794	8,746	10,815	11,663	10,178	10,138	10,806
Purchased**	49,407	30,998	37,257	32,500	30,869	33,452	36,210	31,450	33,186	36,767
Other***	26,924	16,173	13,328	11,014	10,436	12,066	14,819	14,171	15,181	18,070
Refinancing										
Applications	241,947	194,989	259,264	204,643	174,109	226,436	194,628	101,059	128,792	152,857
Originated	83,347	77,133	115,722	89,818	77,683	111,247	92,850	45,902	59,199	67,098
Denied	71,222	53,211	40,090	34,880	30,917	35,426	36,566	24,410	28,075	36,261
Purchased	34,354	28,452	59,245	42,693	30,675	36,017	25,970	9,681	12,843	13,869
Other	53,024	36,193	44,207	37,252	34,834	43,746	39,242	21,066	28,675	35,629
Home Improvement										
Applications	36,081	27,157	17,118	14,056	14,064	16,029	16,806	18,008	18,592	21,383
Originated	15,171	10,865	8,089	7,080	6,793	7,241	8,126	8,145	9,196	11,055
Denied	14,455	11,129	5,488	4,944	5,393	6,584	6,674	7,490	7,267	7,580
Purchased	1,106	1,458	1,084	685	600	720	547	465	392	481
Other	5,349	3,705	2,457	1,347	1,278	1,484	1,459	1,908	1,737	2,267
Multifamily										
Applications	574	634	407	363	436	585	593	601	683	633
Originated	452	493	321	296	354	489	478	493	574	512
Denied	57	49	44	29	36	42	40	42	44	42
Purchased	15	59	13	9	13	7	9	3	12	17
Other	50	33	29	29	33	47	66	63	53	62
Manufactured										
Applications	25,109	14,696	10,601	13,016	17,026	16,804	17,528	16,285	16,600	18,748
Originated	9,333	6,683	5,135	4,557	4,422	4,534	4,951	4,611	4,705	5,074
Denied	9,297	4,722	3,287	5,618	7,898	8,214	8,166	7,302	6,618	7,268
Purchased	2,421	1,115	583	272	252	211	224	286	479	633
Other	4,058	2,176	1,596	2,569	4,454	3,845	4,187	4,086	4,798	5,773

*Applications include all the loans reported by financial institutions to HMDA during the year regardless of the action taken.

**Purchased includes loans purchased by the financial institution during the year.

***Other includes: Applications that were approved but not accepted by the applicant, applications withdrawn by the applicant, and files closed for incompleteness in addition to Preapproval Requests that were denied and Preapproval Requests that were approved but not accepted by the applicant.

As Table 2 indicates, for the second year in a row, the home purchase loan originations for one- to four-family dwellings were at a decade-high as a percent of total applications (58 percent) and denials were at a decade-low at seven percent of all applications. Refinancing volume is dictated by the available interest rates. Considering that in 2017 mortgage interest rates increased compared to 2016[9], while rising for the second year, the volume of refinance loan originations may be at a near-term peak. Home improvement loan originations are consistently on the rise since the lowest level in 2011, but still not the extensively used as a financial tool that it was back in 2007. Moreover, the volume of multifamily loan applications and originations are returning to pre-crash volumes in recent years.

Trends in First-Lien Mortgage loans on Owner-occupied, One- to Four-Family Dwellings[10]

An eleven percent annual increase in the number of home purchase loans originated in 2016 puts the level of mortgage activity in the state in par with the level in 2007, just before the housing market crisis. In the state, home purchase loans originated in 2016 were 98 percent of the loans originated in 2007. Home purchase loan originations in the Nashville Metropolitan Statistical Area (MSA) in 2016 exceeded the level in 2007, as well as in the Chattanooga and Cleveland MSAs. The following table provides the number of home purchase loans originated by the MSAs between 2007 and 2016 and also shows how the loan origination in 2016 is compared to 2007.[11] The Memphis MSA was the furthest from its 2007 level, reaching just 70 percent of pre-recession home purchase loans in 2016.

In 2016, 13 percent of all home purchase loans originated in the state were in Davidson County, followed by Shelby County with nearly 10 percent and Knox County with nine percent. In 15 counties, home purchase loan volume decreased compared to 2015. Putnam County's home purchase loan originations remained unchanged from 2015 to 2016. The balance, 79 counties including the largest mentioned above, saw an increase in origination. Hardeman County experienced the largest annual percentage increase in 2016 with 58 percent, though being a rural county, volume was small, increasing from 83 to 131. The largest volume increase in home purchase loans among the counties with 1,000 or more originations in 2016 was in Maury County followed by Montgomery County (both seeing a 20 percent increase). In Maury County home purchase loans increased from 1,430 in 2015 to 1,717 in 2016, and, in Montgomery County, the loan originations increased from 3,237 to 3,877. Over 10,000 home purchase loans were originated in Davidson County, a three percent annual increase. Refinance loans declined in 17 counties. See Appendix A for the home purchase and refinance loans originated in 2015 and 2016 by county.

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[9] According to Freddie Mac, Primary Mortgage Market Survey, the average interest rate in 2017 was 3.99 percent compared to 3.65 percent in 2016. See http://www.freddiemac.com/pmms/pmms_archives.html

[10] The discussion in the following sections is based on first-lien mortgage loans on owner-occupied one- to four-family dwellings, unless otherwise specified.

[11] Office of Management and Budget (OMB) released the revised delineations of Metropolitan Statistical Areas in February 28, 2013, which affected the HMDA data collected on or after January 1, 2014. After the change in 2013, Maury County was added to the Nashville MSA; Stewart County was excluded from the Clarksville MSA; Campbell, Morgan and Roane Counties were added to the Knoxville MSA; Grainger County was removed from the Morristown MSA and added to the Knoxville MSA; and Crockett County was added to the Jackson MSA. To accurately compare the loan originations in 2016 to previous years, we used the 2013 MSA delineations for all years between 2007 and 2016. This way, the change between two different time periods will be the result of change in the mortgage activity rather than the change in geography.

Table 3. First-Lien Home Purchase Loans Originated for *Owner-Occupied 1-4 Family Dwellings*, 2007-2016, MSA and State

MSA	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016 % of 2007
Chattanooga	4,726	3,436	3,222	2,842	2,632	3,166	3,837	4,010	4,529	5,137	109%
Clarksville	4,221	2,362	3,305	2,515	2,952	3,042	2,912	3,183	3,228	3,877	92%
Cleveland	1,076	867	720	663	682	747	934	964	1,102	1,288	120%
Jackson	1,494	1,113	1,008	811	782	836	982	934	1,072	1,211	81%
Johnson City	2,220	1,646	1,397	1,271	1,246	1,417	1,503	1,538	1,874	2,049	92%
Kingsport-Bristol	2,218	1,748	1,391	1,309	1,176	1,390	1,533	1,588	1,916	2,003	90%
Knoxville	11,292	8,131	7,107	6,295	5,672	6,532	7,770	8,294	9,779	11,245	100%
Memphis	12,916	8,042	7,686	6,687	5,745	6,463	6,999	7,124	7,908	9,029	70%
Morristown	1,062	744	638	577	551	600	691	807	972	1,043	98%
Nashville	29,168	20,613	18,137	16,237	15,462	19,243	23,333	25,228	29,950	32,349	111%
TENNESSEE	81,647	56,122	51,377	45,433	42,716	50,279	58,613	61,998	72,172	80,282	98%

The number of home purchase loans in the Nashville MSA declined annually between 2007 and 2011 and has increased in the last five years. In 2016, home purchase loans originated in the Nashville MSA increased by eight percent compared to 2015. Forty percent of all home purchase loans originated in the state were in the Nashville MSA during 2016. Of all the MSAs, the Cleveland MSA has experienced the largest increase from its pre-recession level of 2007.

The distance was further away for some MSAs' refinance loan levels when comparing 2007 to 2016. The number of refinance loans originated in the state in 2016 was 92 percent of the refinance loans originated in 2007. However, for refinance loan originations, 2007 was not the peak year. Recovery efforts and declining interest rates caused two peak years in refinance loan originations, 2009 and 2012. Even though the number of refinance loans in 2016 was close to pre-crisis levels in most metro areas (even surpassing 2007 levels in the Nashville and Clarksville MSAs) refinance activity was still well below 2009 and 2012 peak levels. The Kingsport-Bristol MSA's refinance mortgage volume was furthest from its peak with 2016 volume measuring at only 41 percent of the highest level[12] of 2009 and 54 percent of the second highest level of 2012.

Table 4. First-Lien Refinance Loans Originated for Owner-Occupied 1-4 Family Dwellings, 2007-2016, MSA and State

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2016 % of 2007	2016 % of 2009	2016 % of 2012
Chattanooga	4,332	3,559	5,844	4,548	3,948	5,841	4,936	2,425	3,067	3,498	81%	60%	60%
Clarksville	1,584	1,499	2,713	2,134	2,493	3,727	2,580	1,371	1,818	2,157	136%	80%	58%
Cleveland	1,366	1,087	1,755	1,549	1,239	1,733	1,310	663	856	929	68%	53%	54%
Jackson MSA	1,086	1,075	1,528	1,341	1,032	1,549	1,359	674	756	868	80%	57%	56%
Johnson City	1,842	2,000	3,101	2,304	1,971	2,646	2,146	940	1,283	1,421	77%	46%	54%
Kingsport-Bristol	2,023	2,113	3,385	2,284	1,953	2,574	2,089	1,048	1,384	1,398	69%	41%	54%
Knoxville	9,722	9,833	17,962	13,201	10,271	14,940	11,763	5,398	7,162	8,111	83%	45%	54%
Memphis	8,870	7,068	11,963	10,326	8,256	13,151	10,633	4,891	6,101	7,150	81%	60%	54%
Morristown	1,197	1,219	1,769	1,302	1,076	1,404	1,216	660	799	878	73%	50%	63%
Nashville	20,524	21,050	36,832	29,531	24,996	35,387	29,281	14,094	20,247	24,582	120%	67%	69%
TENNESSEE	65,456	63,839	105,611	80,768	68,283	98,720	79,463	37,793	51,603	60,096	92%	57%	61%

[12] For the 10-year period that is considered in this study

III. CONVENTIONAL VERSUS GOVERNMENT-INSURED LOANS[13]

In 2016, just over half of loans were conventional, the fifth year that conventional volume has represented this general percentage range. In fact, the distribution of loan types was very similar to the prior year, though there were fluctuations that could be seen gradually across time. Twenty-five percent of all home purchase loans originated were Federal Housing Administration (FHA)-insured, 12 percent were insured by the Veterans Administration (VA) and nearly eight percent were Farm Services Agency (FSA)/Rural Housing Services (RHS)-insured.

Table 5. First-Lien Loans Originated for Owner-Occupied 1-4 Family Dwellings, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Home Purchase Loans Originated										
Total # of Loans	81,647	56,122	51,377	45,433	42,716	50,279	58,613	61,998	72,172	80,282
Conventional	83.3%	58.3%	41.0%	41.3%	44.2%	49.1%	54.7%	56.8%	53.9%	54.7%
FHA	9.8%	30.9%	41.8%	41.8%	34.1%	30.0%	24.3%	20.5%	25.3%	25.4%
VA	5.4%	6.6%	9.9%	9.9%	12.4%	11.5%	11.7%	12.6%	12.0%	12.3%
FSA/RHS	1.5%	4.1%	7.3%	7.0%	9.3%	9.4%	9.3%	10.2%	8.7%	7.6%
Refinance Loans Originated										
Total # of Loans	65,456	63,839	105,611	80,768	68,283	98,720	79,463	37,793	51,603	60,096
Conventional	90.7%	75.3%	73.7%	78.2%	77.9%	75.5%	75.9%	73.7%	69.2%	67.5%
FHA	8.3%	23.2%	22.6%	17.9%	14.1%	14.9%	15.1%	12.8%	17.1%	15.3%
VA	1.0%	1.5%	3.6%	3.8%	7.9%	9.2%	8.5%	13.4%	13.7%	17.1%
FSA/RHS	0.0%	0.0%	0.1%	0.1%	0.2%	0.4%	0.4%	0.1%	0.1%	0.2%

Compared to 2007 when more than 83 percent of all home purchase loans originated were conventional, 2016's 55 percent conventional home mortgage origination was low. However, it was higher than 2009 when only 41 percent of all home purchase loans were conventional, the lowest level in the 10-year study period. Additionally, in the recent years, the percent of conventional loans stabilized.

After the housing market crisis, FHA was the only option available for many Tennesseans who wanted to obtain a home purchase loan. The decline in conventional loans for home purchases in 2008 and 2009 was related to the decline in the availability of conventional loan options in the Tennessee housing market, rather than a distinct preference from homebuyers.[14]

Starting in 2009, FHA increased the mortgage insurance premiums (MIP) and upfront mortgage insurance payments several times and required MIP for the life of the loan unless borrowers refinance the loan. These changes increased the cost of purchasing a home using FHA-insured mortgage loans and led to a declining share of FHA-insured loans in the total home purchase loan originations compared to

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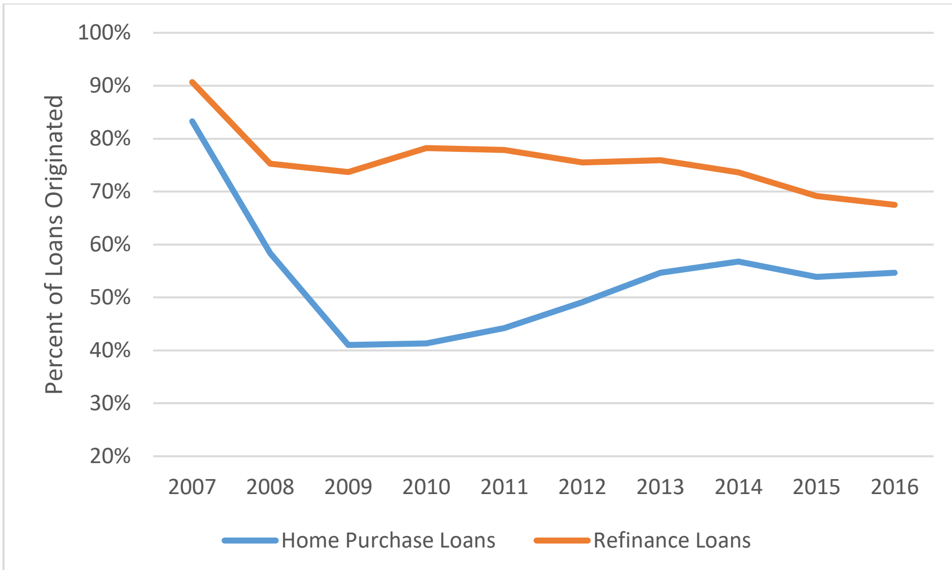
[13] First lien, owner-occupied, home purchase loans for one- to four-family dwellings separated by insurer (conventional, FHA-, VA- and FSA/RHS-insured) and by county can be found at Appendix B.

[14] For example, in their analysis of 2008 HMDA data, Avery et al. argue that declining home prices and weak economy made it difficult for private lending institutions to offer any mortgage loan without a government guarantee. Additionally, after Private Mortgage Insurance (PMI) companies tightened their credit standards, for many individuals without adequate funds for downpayment government-insured loans were the available options.

conventional and other government insured loans. However, following the 2015 announcement[15] of a decrease in mortgage insurance premiums, the use of FHA-insured home purchase loans increased. In 2016, these policies remained unchanged, leaving room in the market for additional conventional lending.

Figure 3. Share of Conventional Loans in Home Purchase and Refinance Loans Originated, 2007-2016, Tennessee



Refinance loans were almost exclusively conventional before the housing market crisis (higher than 90 percent). When the housing market crisis began, this share declined, but remained higher than purchase loans. Close to 70 percent of all refinance loans originated in 2016 were conventional.

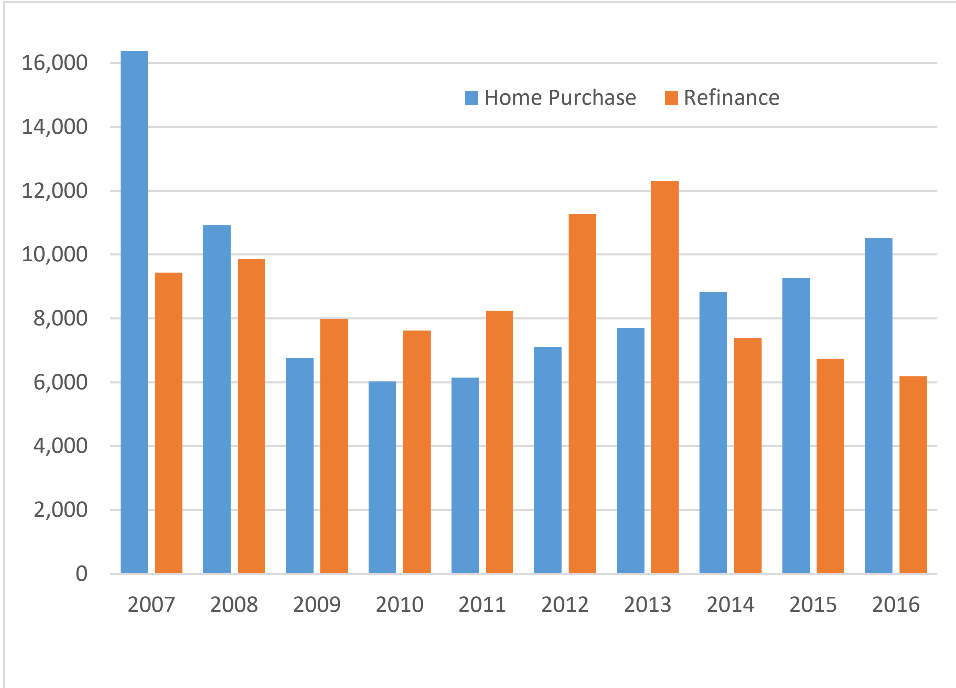
IV. MORTGAGE LOANS FOR NON-OWNER-OCCUPIED HOMES

Financial institutions also report the loan applications and originations for non-owner-occupied homes: rental properties, second homes and/or vacation homes. As Figure 4 shows, the non-owner-occupied home purchases reached the 10-year's highest level in 2007 and started declining in the subsequent years, bottoming out in 2011. Non-owner-occupied home purchase loans have been trending upward since that time. In 2016, with a 14 percent year-over-year increase, non-owner-occupied home purchase loan originations were 75 percent higher than their low in 2011. It is possible that HMDA data underestimate non-owner-occupied home purchases because of the high number of cash only purchases by investors.

Refinance loans for non-owner-occupied homes also fluctuated year over year reaching a high in 2013. Non-owner-occupied home refinances in 2016 were eight percent lower than 2015.

[15] In January 2015, for loans less than $625,500 with loan-to-value (LTV) ratio greater than 95 percent, the annual FHA mortgage insurance rate was reduced from 135 base points to 85 base points.

Figure 4. First-Lien Mortgages Originated for Non-Owner-Occupied Homes, 2007-2016, Tennessee

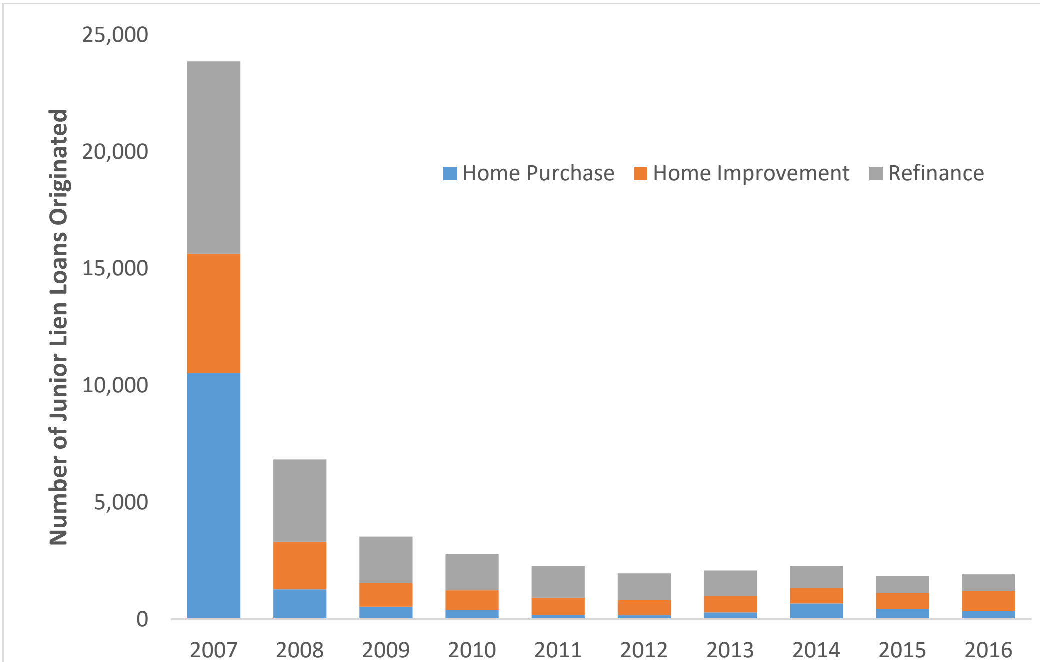


V. JUNIOR LIEN LOANS[16]

One option for borrowers who apply for home purchase loans when they have less than 20 percent of the purchase price as downpayment is to acquire junior lien loans. Borrowers may also use junior lien loans for refinancing their previous mortgage loans or for home improvement. During the years before the housing market crisis, there was a high volume of junior lien loan originations. Post-crisis, the junior lien loan applications and originations declined substantially. In 2007, 44 percent of all junior lien loans were for home purchase, 35 percent were for refinancing, and the rest were for home-improvement projects. The number of junior lien loans originated declined from nearly 24,000 originations in 2007 to less than 7,000 from, the decline rate of 71 percent. In the following years, not only the volume of junior lien loans declined but also the relative shares of each loan purpose changed. In 2016, even though the junior lien loan originations were slightly higher than the previous year, volume was only eight percent of 2007 junior lien loans volume. The decline in junior lien loans coincided with the increase in nonconventional loan originations. It is possible that applicants who do not have enough money for downpayment and closing costs and who cannot obtain junior lien loans are relying more on government backed mortgages. The following figure displays these trends in junior lien loans originated for one- to four-family owner-occupied home mortgage loans.

[16]Unless a junior lien is used for home purchase or explicitly for home improvements, or to refinance an existing lien, it is not reported under HMDA. Even when they are used to purchase a home, home equity lines of credit, many of which are junior liens, do not have to be reported in the HMDA data regardless of the purpose of the loan. See Bhutta, N, Steven Laufer, and Daniel R. Ringo (2017) "Residential Mortgage Lending in 2016: Evidence from the Home Mortgage Disclosure Act Data," forthcoming in the Federal Reserve Bulletin, accessed on 10/11/2017 at https://www.federalreserve.gov/publications/files/2016_HMDA.pdf

Figure 5. Junior Lien Mortgages Originated for 1-4 Family Owner-Occupied Homes by Loan Purpose, 2007-2016, Tennessee



VI. APPLICANT INCOMES AND LOAN AMOUNTS

Financial institutions reporting to HMDA report the loan amounts requested and the applicant income that is considered in making the underwriting decision. The income information is not always required.[17] For example, the income was not provided for 18 percent of the reported loan applications in 2016. The following table compares the average and median income levels (for those with non-missing income information) and average and median loan amounts for conventional and nonconventional loans separated by years.

[17] In some occasions financial institutions reporting HMDA data may mark the "applicant's income" field as "not applicable (NA)." Some of these reasons: the institution does not take the applicant's income into account when making underwriting decisions, the loan or application is for a multifamily dwelling, the transaction is a loan purchase and the institution chooses not to collect the information, the transaction is a loan to an employee of the institution and the institution seeks to protect the employee's privacy, even though institution relied on his or her income, or the borrower or applicant is a corporation, partnership, or other entity that is not a natural person. For more information about HMDA data fields see: A Guide to HMDA Reporting: Getting it Right (Edition effective January, 1, 2013), Federal Financial Institutions Examination Council, at http://www.ffiec.gov/hmda/pdf/2013guide.pdf

Table 6. Average and Median Income and Loan Amounts[18], Thousands of 2016 Dollars, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Conventional										
Average Income	$82	$88	$98	$103	$100	$99	$94	$94	$98	$99
Median Income	$61	$66	$74	$76	$74	$73	$69	$68	$73	$73
Average Loan Amount	$172	$178	$192	$192	$186	$184	$176	$182	$196	$207
Median Loan Amount	$140	$144	$158	$155	$148	$149	$140	$145	$157	$165
FHA										
Average Income	$61	$63	$64	$64	$63	$62	$61	$59	$61	$60
Median Income	$54	$56	$55	$54	$53	$53	$52	$50	$52	$51
Average Loan Amount	$146	$156	$160	$157	$152	$151	$149	$144	$156	$159
Median Loan Amount	$142	$145	$148	$144	$139	$139	$136	$132	$142	$147
VA										
Average Income	$68	$72	$73	$75	$76	$79	$76	$73	$75	$75
Median Income	$61	$64	$64	$65	$66	$68	$65	$63	$65	$64
Average Loan Amount	$181	$186	$191	$192	$184	$188	$189	$189	$196	$202
Median Loan Amount	$166	$171	$172	$173	$166	$168	$169	$167	$176	$180
FSA/RHS										
Average Income	$43	$42	$44	$43	$42	$42	$43	$44	$45	$45
Median Income	$41	$41	$41	$41	$39	$40	$40	$41	$43	$43
Average Loan Amount	$115	$114	$124	$125	$125	$126	$125	$126	$131	$133
Median Loan Amount	$109	$106	$120	$120	$121	$122	$121	$122	$125	$129
ALL LOANS										
Average Income	$80	$80	$86	$89	$88	$89	$85	$83	$86	$86
Median Income	$60	$61	$66	$66	$65	$67	$63	$61	$64	$64
Average Loan Amount	$170	$171	$181	$181	$176	$176	$171	$173	$185	$194
Median Loan Amount	$141	$144	$153	$151	$145	$146	$140	$142	$153	$160

NOTE: The applications in the table include first-lien mortgage loans for owner-occupied one-to four-family dwellings.

Across the ten years examined, an average borrower who applied for a conventional loan had a higher income than nonconventional loan applicants. Borrowers who applied for loans insured by FSA/RHS had the lowest income (both average and median). In 2016, borrowers who applied for conventional loans earned $99,000 while borrowers who used FSA/RHS insured loans earned $45,000 average annual income. In between the two, borrowers with FHA-insured loans earned an average of $60,000. Over the years, especially for borrowers with conventional loans, the average incomes were relatively higher than the median incomes, which can indicate some high income outliers that would raise the average.

Average loan amounts for VA-insured loans were as high as, and in some years higher than, average conventional loan amounts. The applicants who used VA insurance also had higher average incomes than borrowers in other nonconventional loan categories (FHA and FSA/RHS). In 2016, inflation adjusted average loan amount increased from 2015 for all loan types. Borrowers who used FSA/RHS-insured loans, on average, had lower income and borrowed less than the borrowers who used other loan types.

[18] The dollar amounts are inflation adjusted for 2016.

Figure 6. Median Income and Loan Amount, by Insurer, in Thousands, 2016 Dollars, 2007-2016, Tennessee

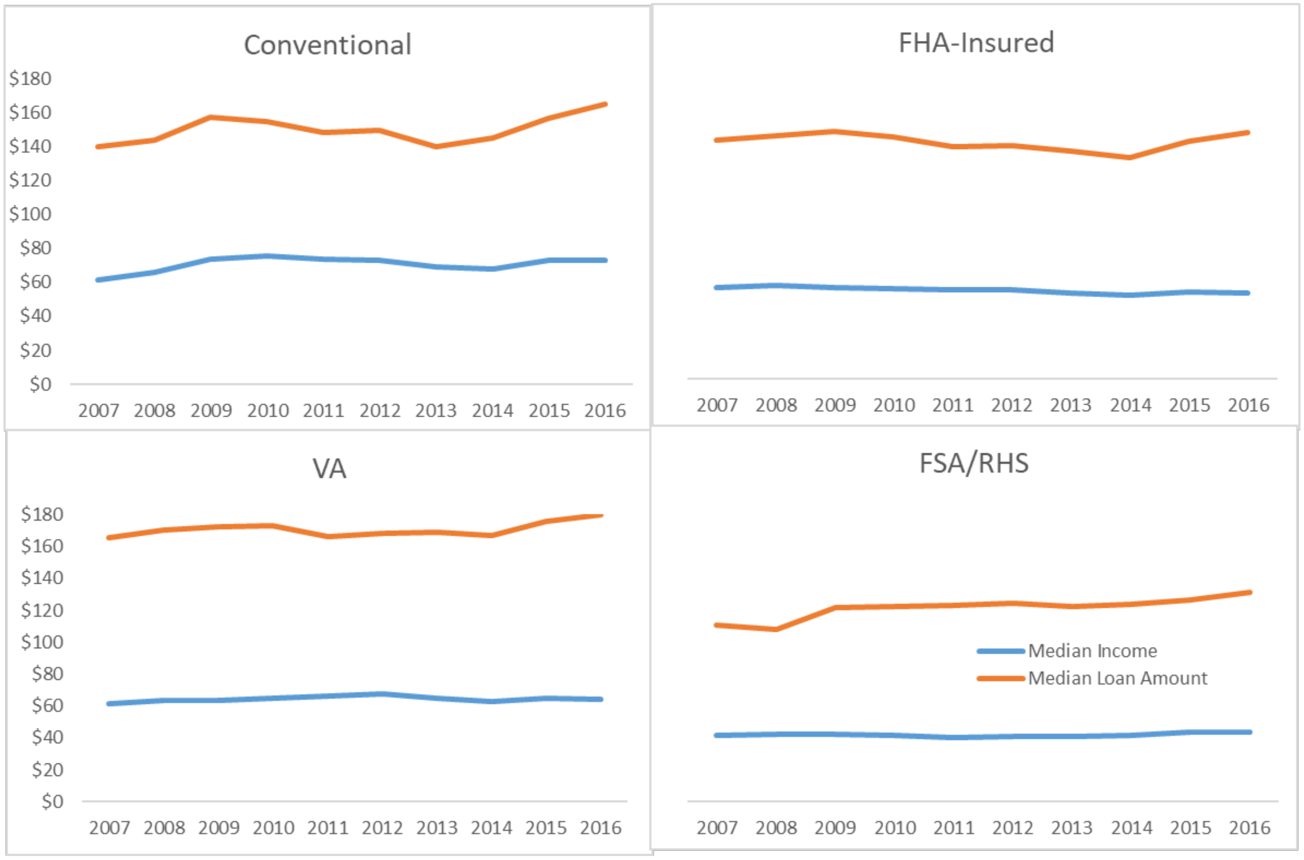


Figure 6 compares the median income and loan amount for each loan type. Borrowers who had FSA/RHS-insured loans had the lowest median income and, in real terms, their income was nearly flat. For each of the four loan types, the gap between the loan amount and income is increasing in the recent years.

In the following figures, we looked at the distribution of home purchase and refinance loans that were originated between 2007 and 2016 by loan amount[19]. In 2016, four percent of home purchase loans and three percent of refinance loans originated had loan amounts above the national conforming loan limit of $417,000. For home purchase loans, from 2004 through 2007, the ratio of loans between $150,000 and $300,000 increased, while loan amounts below $85,000 declined. The ratio of loans between $150,000 and $300,000 dipped in 2008 and 2009, but has since increased in every subsequent year since then. In 2016, 47 percent of all borrowers who had home purchase loans had loan amounts between $150,000 and $300,000. This price range is becoming increasingly common; in 2016, the median price of homes sold in Tennessee[20] was $185,000 and the average price was $227,088. Declining shares of lower

[19] Loan amounts are non-inflation adjusted nominal values.
[20] THDA tabulations of data obtained from the Property Assessment Division, Comptroller's Office. The median and average prices of homes sold in Tennessee and counties can be found at https://thda.org/research-planning/home-sales-price-by-county

priced home purchases in the total home purchase loan origination is another sign of eroding affordability in the housing markets.

Figure 7. Home Purchase Loans Originated, Nominal Loan Amount, 2007-2016

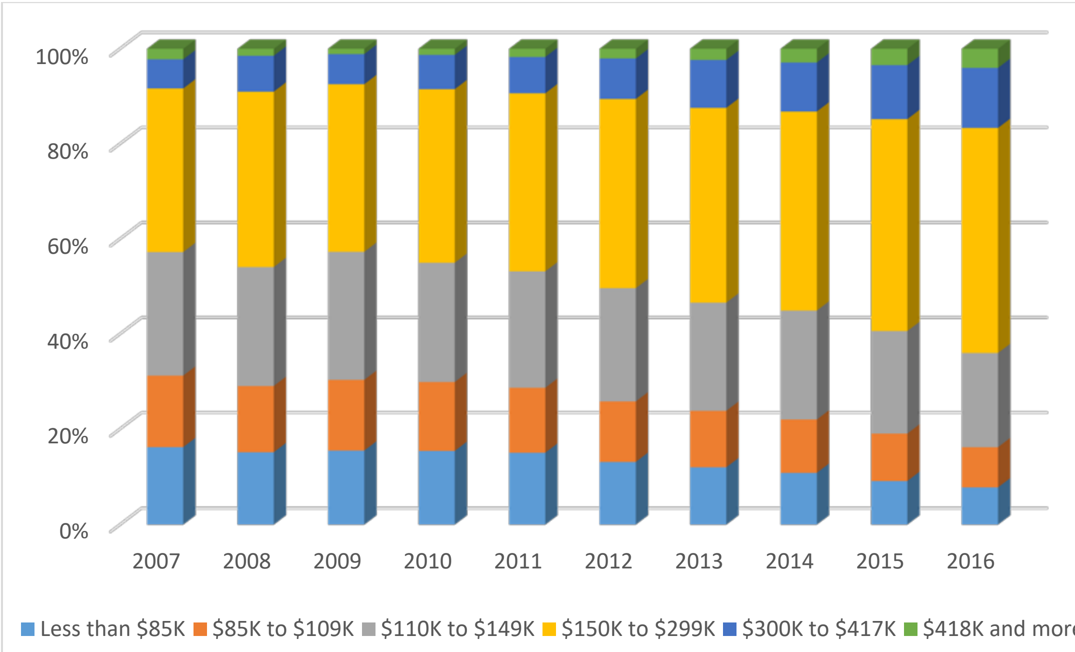
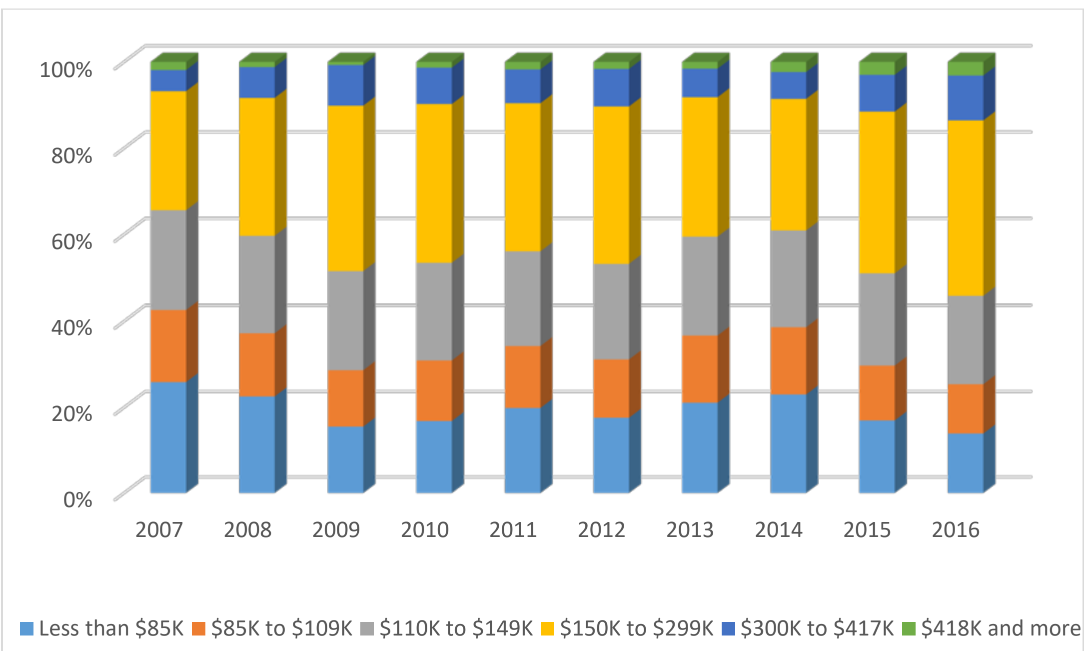


Figure 8. Refinance Loans Originated, Nominal Loan Amount, 2007-2016



From 2007 to 2009, the percentage of refinance loans originated for loan amounts less than $110,000 declined and loans for loan amounts between $150,000 and $300,000 and loan amounts between

$300,000 and $417,000 increased, which means borrowers started refinancing larger loan amounts. In 2016, 54 percent of all refinance loans were for loan amounts $150,000 and more.

VII. ANALYSIS BY DEMOGRAPHIC GROUPS AND INCOME LEVELS[21]

HMDA data allow for an examination of loan applications, originations and denials based on various demographics. HMDA data report race, ethnicity and gender for both applicant and co-applicant, if available.[22]

We also looked at the applicants' income compared to the estimated area median family income[23] (AMFI) of the census tract where they reported. The purpose was to identify the percent of loan applications, originations and denials for low-income applicants[24], and determine if there was any differential treatment of loan applicants based on the income levels.

In recent years, the share of total home purchase and total refinance loans originated for black or African American borrowers declined (Table 8). In 2007, 10 percent of home purchase loans were made to black or African American borrowers, while the same ratio declined to 6.7 percent in 2016.The most recent figure is up, slightly, from the 10-year low of six percent in 2013.Refinance loans also declined over 10 years from 11 percent in 2007 to eight percent in 2016. However, this share of refinance loans among African-American borrowers was more volatile across the decade, dipping to as low as 4.3 percent in 2010. The percent of home purchase loans to Hispanic or Latino borrowers were the highest they have been in the past 10 years. For refinance loans, 2016 marks the second time in the past 10 years that Hispanic and Latino borrowers hit 2.3 percent. Both home purchase and refinance loans to low-income borrowers declined in 2016.[25]

Table 8 shows that, in recent years, income information is missing for a higher portion of refinance loan borrowers. Based on national analyses, this pattern indicates a decreased reliance on income information for underwriting refinance loans, which means more borrowers are choosing nonconventional refinance products where neither an appraisal nor income documentation is required. [26] For example, in 2016, nearly 20 percent of refinance loan borrowers did not have income information reported, and only seven percent of those refinance borrowers without income information refinanced

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[21] For the analysis from this point on, we will consider first-lien loans for owner-occupied one to four family dwellings.

[22] For the loans that are purchased, the institutions do not have to collect or report race. If the borrower or applicant is not an actual person (for example, a corporation or a partnership), race will be "not applicable." Each applicant can report belonging to up to five racial groups. In this report, we defined combined race categories. The methodology for determining and defining those combined race categories is explained in Appendix C.

[23] The MFI reported in HMDA data files and used in these calculations is the estimated Tract MFI, which is the census tract's estimated MFI for each year, based on the HUD estimate for the Metropolitan Statistical Area (MSA)/Metro Division (MD) or non-MSA/MD area where the tract is located. For tracts located outside of an MSA/MD, the MFI is the statewide non-MSA/MD MFI.

[24] A low- to moderate-income (LMI) applicant is defined as someone who earns less than 80 percent of area median family income. A middle-income applicant earns more than 80 percent but less than 120 percent of the estimated AMFI. If the applicant's income is more than 120 percent of the estimated AMFI, then the applicant is labeled as a high-income applicant. This definition of borrower income categories is consistent with Bhutta, Popper and Ringo's analysis of 2013 HMDA data. For more information, see Neil Bhutta, Jack Popper and Daniel R. Ringo (2015), "The 2014 Home Mortgage Disclosure Act Data," Federal Reserve Bulletin, vol. 101 (November), http://www.federalreserve.gov/pubs/bulletin/2014/pdf/2013_HMDA.pdf

[25] First-lien, owner-occupied, 1-4 family, home purchase and refinance loan originations by race and by county in 2016 can be found at Appendices D and E.

[26]See, Neil Bhutta and Daniel R. Ringo (2016), "Residential Mortgage Lending from 2004 to 2015: Evidence from the Home Mortgage Disclosure Act Data," *Federal Reserve Bulletin*, vol. 102 (November), https://www.federalreserve.gov/pubs/bulletin/2016/pdf/2015_HMDA.pdf

to a conventional loan product while 39 percent refinanced into an FHA-insured mortgage and 54 percent to a VA-insured mortgage.

Table 8. Borrower Characteristics and Purpose of the Loan, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
					I. Home Purchase Loans					
Borrower Race										
Asian	1.6%	1.3%	1.6%	1.4%	1.5%	1.6%	1.7%	1.7%	1.8%	1.9%
African American	10.1%	8.0%	7.9%	8.6%	7.3%	7.1%	6.1%	6.4%	6.5%	6.7%
White	79.0%	81.9%	82.5%	82.9%	83.7%	83.9%	84.7%	84.5%	84.9%	83.7%
Other Minority	0.4%	0.3%	0.5%	0.6%	0.6%	0.4%	0.4%	0.5%	0.4%	0.4%
Multi-Racial	1.0%	1.0%	1.0%	0.9%	1.1%	1.1%	1.2%	1.3%	1.4%	1.5%
Missing	8.0%	7.5%	6.5%	5.6%	5.8%	5.8%	5.8%	5.6%	5.1%	5.7%
Borrower Ethnicity										
Hispanic or Latino	3.3%	2.7%	2.4%	2.5%	2.7%	2.7%	3.0%	3.2%	3.4%	3.8%
Not Hispanic or Latino	89.2%	90.2%	90.9%	91.7%	91.3%	91.3%	91.1%	91.2%	91.5%	90.6%
Missing and/or NA	7.5%	7.0%	6.6%	5.8%	5.9%	6.0%	5.9%	5.6%	5.1%	5.6%
Borrower Income										
Low to Moderate Income	30.9%	31.2%	40.1%	38.4%	35.7%	34.8%	30.2%	30.0%	30.2%	28.3%
Middle Income	26.5%	26.8%	26.1%	25.3%	25.5%	25.5%	25.8%	26.4%	26.5%	26.4%
High Income	40.4%	40.3%	32.5%	35.2%	37.8%	38.7%	43.0%	42.9%	42.5%	44.7%
Missing	2.3%	1.6%	1.3%	1.0%	1.0%	0.9%	1.1%	0.7%	0.8%	0.7%
					II. Refinance Loans					
Borrower Race										
Asian	0.6%	0.7%	1.0%	1.0%	1.2%	1.1%	1.1%	0.9%	1.0%	1.2%
African American	10.9%	7.5%	4.6%	4.3%	4.7%	5.3%	6.8%	8.0%	7.8%	8.0%
White	77.7%	81.9%	84.6%	85.5%	85.1%	84.8%	82.9%	80.4%	80.1%	78.6%
Other Minority	0.3%	0.2%	0.3%	0.3%	0.4%	0.3%	0.4%	0.5%	0.4%	0.4%
Multi-Racial	0.9%	0.9%	1.0%	0.9%	1.0%	1.1%	1.2%	1.6%	1.2%	1.2%
Missing	9.6%	8.8%	8.5%	8.0%	7.7%	7.4%	7.6%	8.7%	9.4%	10.4%
Borrower Ethnicity										
Hispanic or Latino	1.8%	1.7%	1.6%	1.6%	1.8%	1.8%	2.1%	2.3%	2.2%	2.3%
Not Hispanic or Latino	89.2%	90.4%	90.0%	90.3%	90.6%	90.7%	90.1%	89.1%	88.7%	87.6%
Missing and/or NA	9.0%	7.9%	8.4%	8.1%	7.6%	7.5%	7.8%	8.6%	9.1%	10.1%
Borrower Income										
Low to Moderate Income	28.2%	26.5%	21.9%	21.7%	21.3%	20.7%	21.2%	24.7%	21.1%	19.2%
Middle Income	27.2%	25.7%	22.1%	22.5%	21.7%	20.9%	21.4%	21.9%	20.4%	19.5%
High Income	40.1%	41.6%	42.5%	46.7%	44.5%	44.5%	43.0%	39.6%	39.9%	41.8%
Missing	4.6%	6.2%	13.5%	9.1%	12.5%	13.8%	14.3%	13.8%	18.5%	19.5%
# of Home Purchase Loans	81,647	56,122	51,377	45,433	42,716	50,279	58,613	61,998	72,172	80,282
# of Refinance Loans	65,456	63,839	105,611	80,768	68,283	98,720	79,463	37,793	51,603	60,096

NOTE: First lien mortgage loans originated for one-to-four family owner-occupied homes.

Figure 9. Home Purchase Loans Originated, Borrower Income, 2007-2016

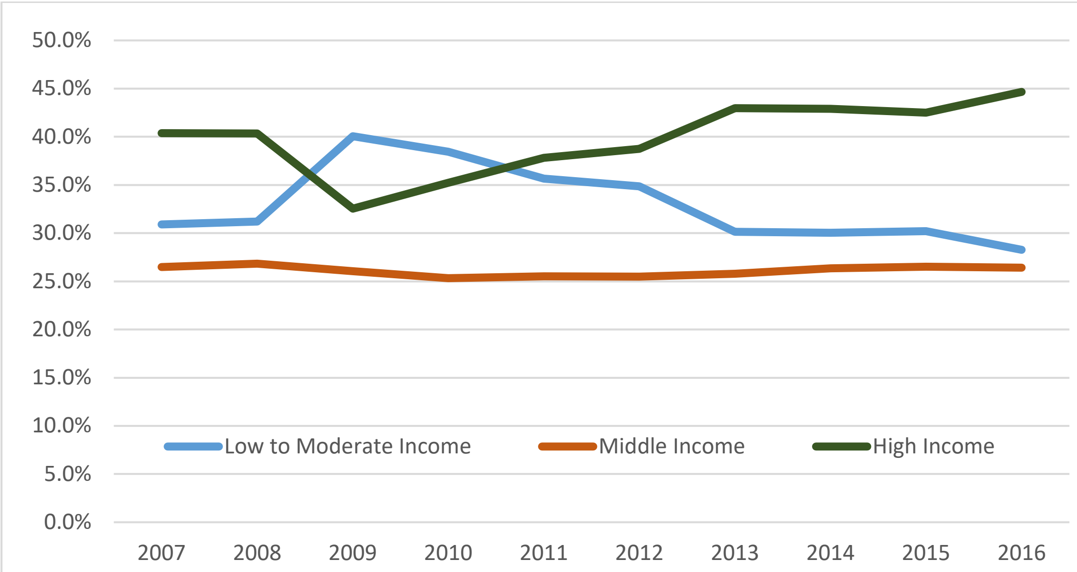
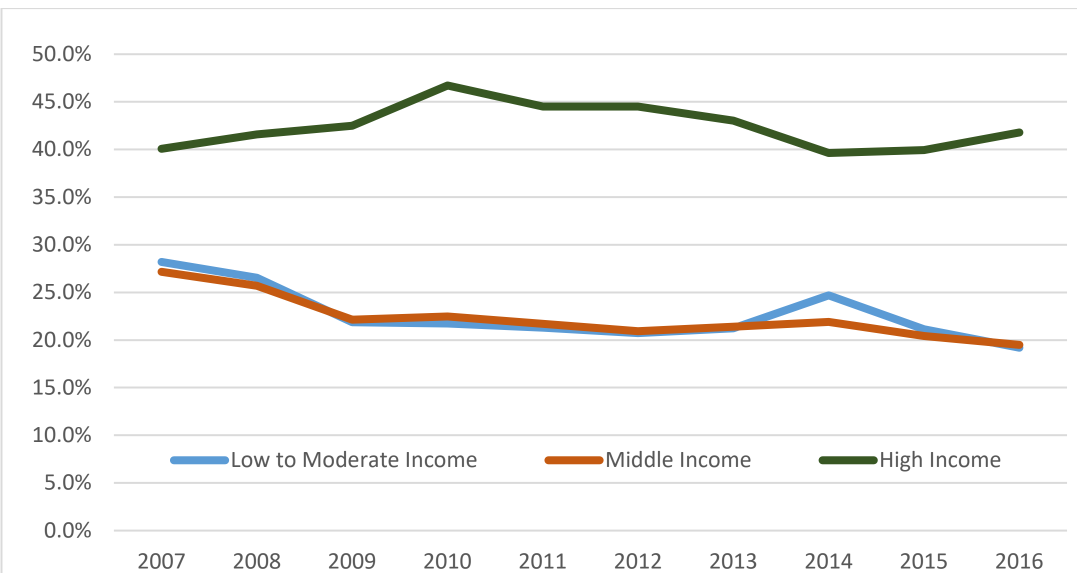


Figure 10. Refinance Loans Originated, Borrower Income, 2007-2016



As the preceding figures[27] show, in the study period, high-income borrowers have consistently accounted for a higher percentage of refinance loans originated than other income categories. The difference between the percent of refinance loans originated for high-income borrowers and the percent of LMI and middle income borrowers widened in the years leading to the housing market crash, but after 2010, the percentage of high-income borrowers who refinanced mortgages declined, and in the recent years this difference was closing. However, after 2014, there is again an increasing trend in higher income borrowers' share in the total refinance loans originated. In 2016, 42 percent of all

[27] Not included in the figures is the borrowers whose income information that was not provided. Especially for the refinance loan originations, the borrowers without income information is a relatively higher portion of all refinance loan borrowers. For example, in the last three years of this study (2014-2016), 14 percent or more of all refinance loan borrowers did not have income information.

refinance loans originated were for higher income borrowers compared to 40 percent in the previous year.

The picture is quite different for the home purchase loans originated. Before the housing market crash, the percentage of high-income borrowers with a home purchase loan was higher than LMI and middle-income borrowers and it continued increasing until 2008. In 2009, 33 percent of all home purchase loans originated were for higher-income borrowers. In the meantime, more loans were originated for lower-income borrowers after 2008. In 2009, LMI borrowers received 40 percent of all home purchase loans originated during the year. The percentage of loans originated for middle-income borrowers was steady over the years, but always lower than the LMI and high-income borrowers.

It is interesting to see if there is any difference in the loan originations for different borrower characteristics depending on whether or not the loan is a conventional or government insured loan. The following table displays the nonconventional, first-lien mortgage loans originated for one- to four-family owner-occupied homes separated by borrower characteristics and loan purpose. The percentages given in the table represent the nonconventional loans made to borrowers in a racial category as percent of all loans made to borrowers in that racial group (including conventional and nonconventional loans). For example, in 2016, 19 percent of all loans made for Asian borrowers were nonconventional loan products.

The number of first-lien home purchase and refinance loans originated for owner-occupied, one- to four-family dwellings separated by race and county is provided in Appendices D and E.

Table 9. Borrower Characteristics and Purpose of the Loan, Nonconventional Loans, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I. Home Purchase Loans										
Borrower Race	***Percent of Non-Conventional Loan Borrowers***									
Asian	8.5%	20.2%	35.4%	35.1%	37.9%	33.4%	22.3%	23.5%	22.9%	19.1%
African American	25.4%	69.2%	86.3%	87.6%	83.3%	81.3%	76.5%	73.4%	77.7%	75.0%
White	16.0%	39.8%	57.3%	56.6%	54.1%	49.2%	44.0%	41.6%	44.2%	43.7%
Other Minority	18.2%	34.9%	38.6%	31.1%	35.5%	34.8%	34.1%	29.9%	34.9%	34.4%
Multi-Racial	26.0%	48.1%	60.3%	60.5%	64.2%	56.5%	54.1%	54.3%	55.4%	54.8%
Missing	12.7%	36.1%	54.3%	54.5%	50.7%	43.1%	37.4%	38.4%	43.8%	40.8%
Borrower Ethnicity										
Hispanic or Latino	21.6%	55.1%	75.2%	75.1%	72.6%	65.5%	61.5%	60.8%	60.6%	58.7%
Not Hispanic or Latino	16.9%	41.8%	59.1%	58.8%	55.9%	51.2%	45.5%	43.0%	45.8%	45.2%
Missing and/or NA	11.8%	34.5%	51.3%	50.1%	45.4%	39.3%	35.2%	36.7%	42.1%	38.3%
Borrower Income										
Low to Moderate Income	20.1%	52.8%	71.6%	73.0%	70.0%	65.8%	60.9%	58.2%	61.4%	58.7%
Middle Income	22.8%	50.8%	65.5%	65.2%	64.2%	58.3%	55.1%	53.4%	55.7%	56.5%
High Income	10.7%	27.6%	39.3%	39.4%	37.5%	33.2%	29.2%	26.9%	29.6%	30.6%
All Borrowers	*16.7%*	*41.7%*	*59.0%*	*58.7%*	*55.8%*	*50.9%*	*45.3%*	*43.2%*	*46.1%*	*45.3%*
II. Refinance Loans										
Borrower Race	***Percent of Non-Conventional Loan Borrowers***									
Asian	6.9%	17.4%	12.4%	11.8%	11.0%	12.2%	12.7%	12.8%	13.9%	10.7%
African American	16.3%	44.8%	58.5%	48.4%	50.7%	48.9%	45.9%	47.5%	54.2%	56.8%
White	8.4%	22.3%	24.4%	20.5%	20.6%	22.7%	22.0%	23.0%	27.7%	29.2%
Other Minority	9.5%	34.3%	18.3%	14.1%	19.4%	25.5%	24.6%	22.0%	25.9%	37.3%
Multi-Racial	14.9%	32.5%	32.8%	27.7%	29.5%	35.3%	33.6%	57.5%	43.7%	44.3%
Missing	8.7%	30.3%	29.3%	22.1%	23.2%	27.0%	27.3%	33.9%	38.8%	39.8%
Borrower Ethnicity										
Hispanic or Latino	13.4%	34.6%	39.4%	29.8%	33.6%	36.5%	36.5%	35.0%	37.7%	40.5%
Not Hispanic or Latino	9.4%	24.4%	25.9%	21.7%	21.9%	24.3%	23.6%	25.4%	30.0%	31.6%
Missing and/or NA	8.1%	26.9%	28.5%	20.5%	21.8%	23.8%	25.4%	33.4%	37.1%	39.0%
Borrower Income										
Low to Moderate Income	9.3%	26.2%	27.0%	24.4%	20.6%	18.4%	15.0%	17.0%	21.0%	23.5%
Middle Income	10.9%	29.4%	23.4%	22.1%	20.9%	17.6%	15.6%	19.4%	20.8%	22.1%
High Income	5.7%	16.6%	12.3%	12.1%	11.8%	10.0%	9.6%	12.2%	13.4%	13.2%
All Borrowers	*9.3%*	*24.7%*	*26.3%*	*21.8%*	*22.1%*	*24.5%*	*24.1%*	*26.3%*	*30.8%*	*32.5%*

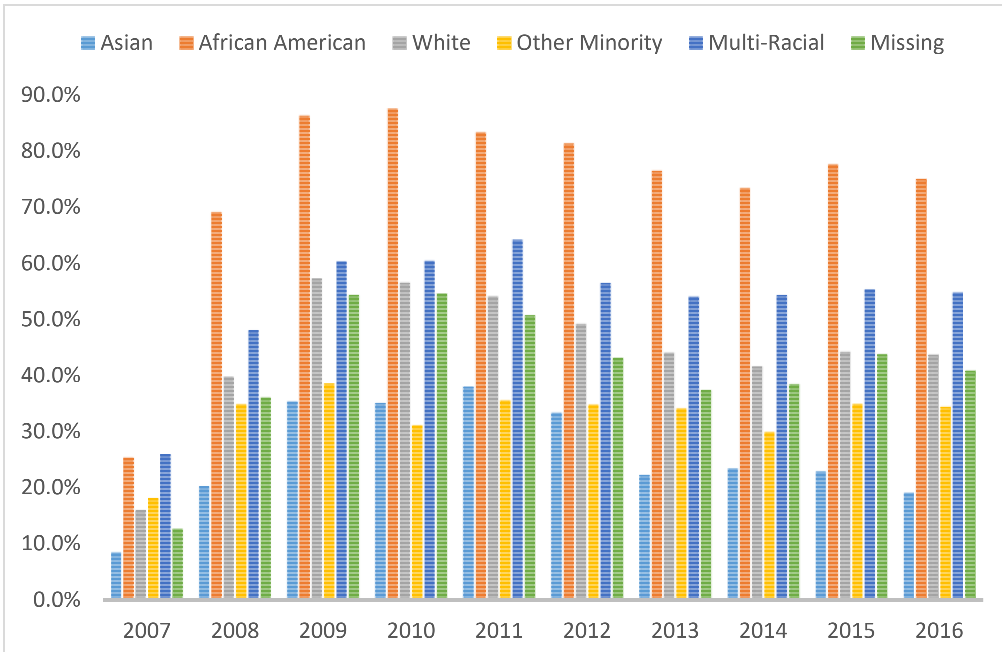
NOTE: Nonconventional, first lien mortgage loans originated for one-to-four family owner-occupied homes.

Table 9 reveals that African American and LMI and middle income borrowers used nonconventional government-insured (FHA, VA and/or FSA/RHS insured) loans more often than conventional loans. In 2016, for example, 75 percent of all African-American borrowers, 59 percent of LMI borrowers, 57 percent of middle-income borrowers and 59 percent of all Hispanic or Latino borrowers used nonconventional loans for home purchase, while in the same year, 45 percent of all home purchase loans were nonconventional. The data also show that, in all race, ethnicity and income categories, the share of nonconventional loans substantially increased in 2008. For example, in 2007, 25 percent of

African-American home buyers selected nonconventional loans while that percentage increased to 69 percent in 2008 and to 88 percent in 2010. Similar trends are visible in all other race categories. In 2016, in *almost* all race categories and for all borrowers, the share of nonconventional loans were lower than in 2015. This is a sign that conventional loan products are slowly returning to the market.

The following figure displays that African-American and multi-racial borrowers are more likely to use nonconventional loans than conventional loans.

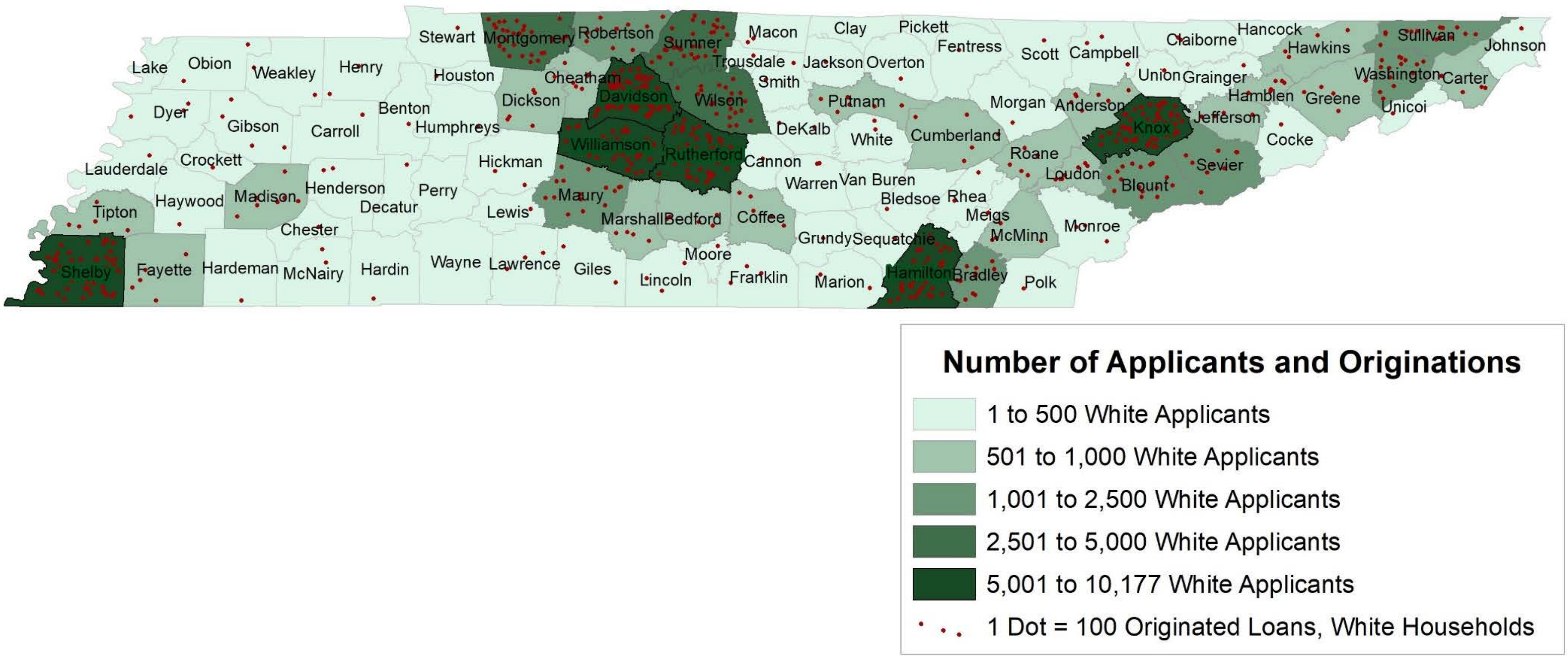
Figure 11. Non-Conventional Share of Home Purchase Loans, by Race, 2007-2016



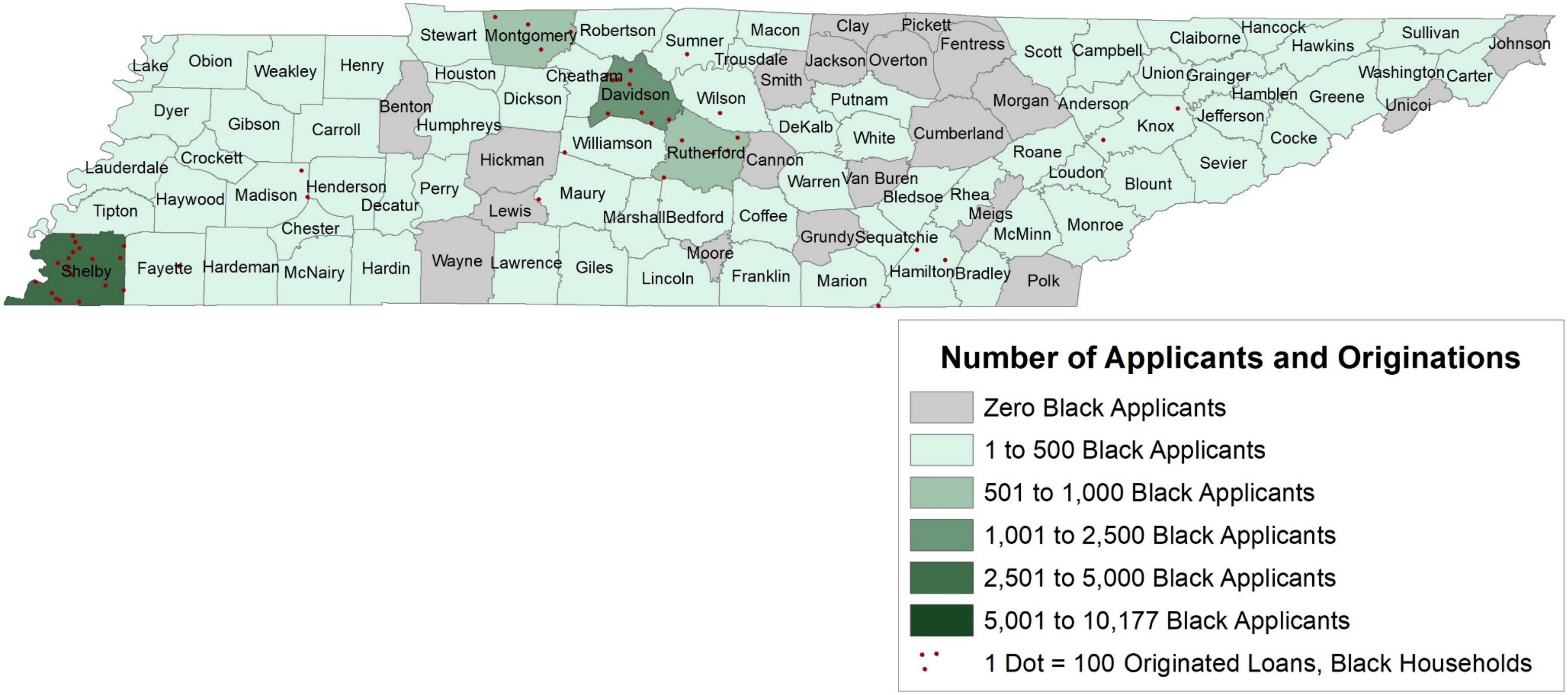
A comparison of borrowers who received nonconventional (FHA, VA or FSA/RHS insured) first lien home purchase loans for owner-occupied one- to four-family dwellings with race and county loan totals is given in Appendix F.

The following maps display the number of loan applications and originations for white and African American borrowers in 2016:

Map 1: Total Loan Applications and Originations, White Applicants, 2016



Map 2: Total Loan Applications and Originations, African American Applicants, 2016



VIII. DENIAL RATES AND DENIAL REASONS

We calculated the denial rates by dividing the number of loans denied by the financial institution by the total number of loan applications excluding the number of applications withdrawn and the applications closed for incompleteness.

In the following table, denial rates are presented as separated by race and loan type, i.e. conventional versus nonconventional. The table shows variations in denial rates across different race categories. However, the denial rates data in the absence of other important borrower and loan characteristics such as the applicants' credit scores and loan to value (LTV) ratios should be considered carefully. Additionally, looking back to the housing crisis years captures a range of issues that make the comparison of denial rates across time tricky. For example, in the years prior to housing market crash, looser underwriting standards brought riskier borrowers with weaker credit profiles to the market, increasing the demand for loans. After the crisis, it is possible that some borrowers with blemished credit histories or with lower income might self-select not to apply for a loan.

Table 10. Denial Rates, Conventional and Nonconventional Home Purchase Loans, 2007-2016, Tennessee

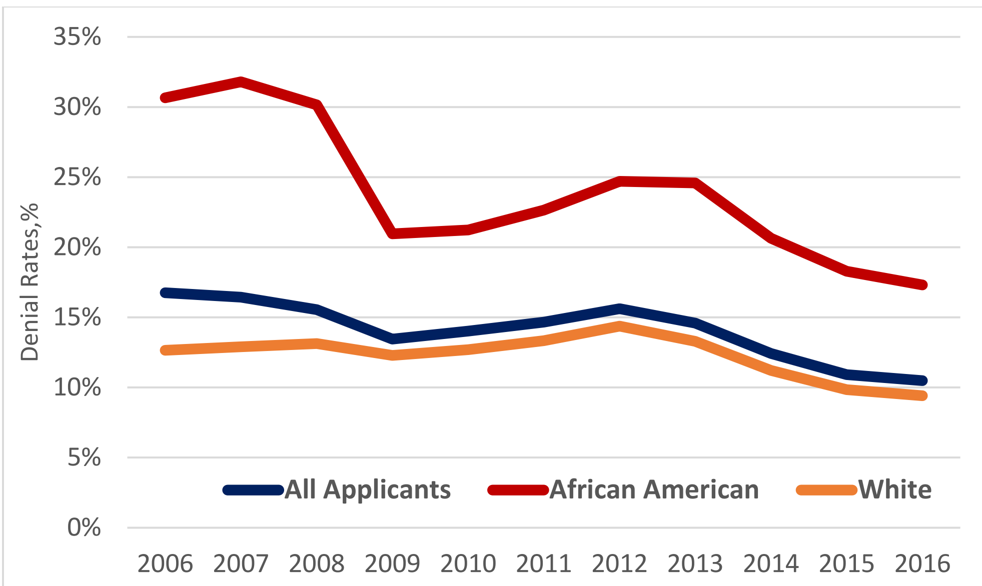
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I. Home Purchase Loans										
Conventional and Nonconventional										
All Applicants	16.4%	15.5%	13.5%	14.0%	14.7%	15.6%	14.6%	12.4%	10.9%	10.5%
Race										
Asian	12.5%	16.7%	13.4%	15.4%	16.8%	16.4%	16.3%	13.3%	12.1%	11.5%
African American	31.8%	30.2%	21.0%	21.2%	22.6%	24.7%	24.6%	20.6%	18.3%	17.3%
White	12.9%	13.1%	12.3%	12.7%	13.3%	14.4%	13.3%	11.2%	9.8%	9.4%
Other Minority	22.6%	23.7%	14.1%	16.0%	12.7%	17.6%	20.7%	14.0%	14.2%	14.4%
Multi-Racial	14.9%	17.2%	14.3%	16.0%	14.4%	17.0%	17.9%	12.1%	10.2%	11.7%
Missing	24.1%	20.1%	17.4%	19.6%	21.0%	20.0%	19.3%	19.1%	17.4%	15.9%
Ethnicity										
Hispanic	18.6%	19.5%	16.5%	17.0%	16.1%	19.0%	19.6%	17.1%	14.9%	12.6%
Not Hispanic	15.6%	14.9%	13.0%	13.5%	14.0%	15.1%	14.1%	11.8%	10.4%	10.0%
Conventional Only										
All Applicants	16.9%	15.8%	15.4%	15.1%	15.6%	15.5%	13.0%	10.9%	9.7%	9.1%
Race										
Asian	12.8%	16.8%	13.1%	13.5%	17.0%	16.0%	13.9%	13.2%	11.6%	10.6%
African American	34.5%	39.0%	37.1%	35.3%	31.6%	31.9%	27.7%	22.5%	21.5%	19.1%
White	13.1%	13.4%	14.2%	14.0%	14.5%	14.6%	11.9%	9.8%	8.8%	8.2%
Other Minority	24.1%	27.2%	16.3%	15.3%	14.2%	18.1%	20.6%	11.2%	14.0%	13.5%
Multi-Racial	15.3%	18.0%	17.7%	20.4%	14.3%	17.3%	17.0%	11.6%	8.7%	10.9%
Missing	24.8%	20.0%	18.3%	19.6%	21.3%	17.4%	17.5%	16.9%	15.9%	14.1%
Ethnicity										
Hispanic	19.3%	21.8%	21.7%	20.9%	18.8%	20.6%	17.3%	17.4%	14.2%	11.3%
Not Hispanic	16.1%	15.2%	15.0%	14.6%	14.7%	14.9%	12.4%	10.2%	9.1%	8.6%

NOTE: First lien mortgage home purchase loans for one-to-four family owner-occupied homes.

In Tennessee, in 2016, the denial rate of all borrowers in different race categories (including conventional and nonconventional loans) who applied for a home purchase loan declined slightly from 10.9 percent in 2015 to 10.5 percent. In fact, for almost all race categories, except multi-racial and other minority applicants, the denial rates in 2016 were the lowest among the years covered in this report (2007 to 2016). At 17.3 percent, black or African American applicants had the highest denial rate in 2016, followed by the applicants whose race information was not provided. Among the nonwhite race categories Asian applicants had the lowest denial rates. Except African-American applicants, conventional home purchase loan applicants had lower denial rates than nonconventional applicants in 2016. Hispanic applicants also had higher denial rates than the non-Hispanic applicants who applied for a home purchase loan.

The following figure compares the denial rates of home purchase loans for all applicants, and white and African American applicants.

Figure 12. Denial Rates, Conventional and Non-Conventional First Lien, Owner-Occupied, 1-4 Family Home Purchase Loans; All, African American and White Applicant, 2007-2016



African American applicants were consistently denied more often than white and all other applicants. This difference was more pronounced before the housing market crash with a large dip in 2009. Since 2012, the denial rates for all races are declining.

Denial rates for refinance loans, in general, were higher than home purchase loans. While the denial rates for home purchase loans declined in 2016 compared to 2015 for almost all race categories, denial rates for refinance loans in 2016 increased for all borrowers except Hispanic and Asian applicants. Regardless of race, 34 percent of all borrowers who applied for either conventional or nonconventional refinance loans were denied in 2016 compared to 31 percent denial rate in 2015. White refinance loan applicants had the lowest denial rate in all 10 years covered with this study.

The following table displays the denial rates for refinance loans separated by loan type and applicants' race.

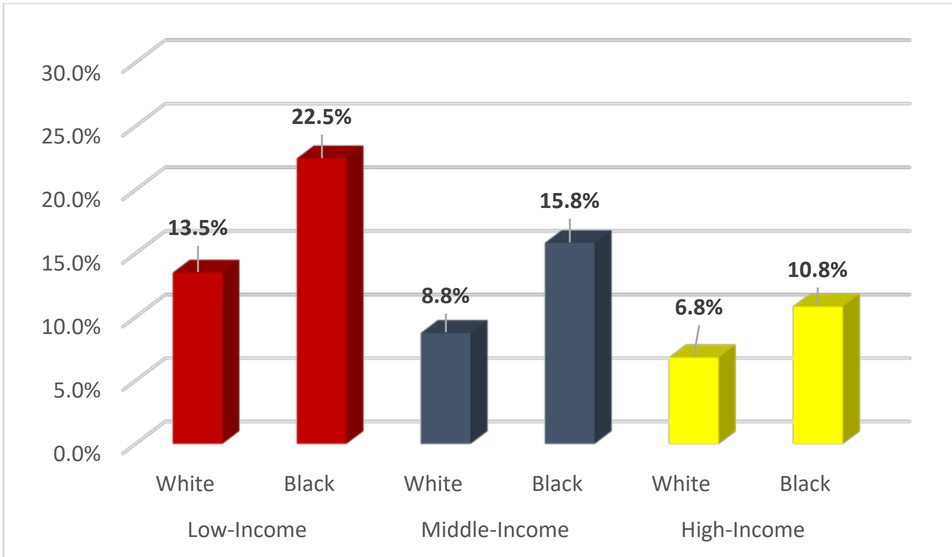
Table 11. Denial Rates, Conventional and Nonconventional Refinance Loans, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
II. Refinance Loans										
Conventional and Nonconventional										
All Applicants	44.2%	39.7%	24.3%	26.4%	26.8%	22.6%	26.8%	34.2%	30.8%	33.6%
Race										
Asian	40.2%	35.6%	26.0%	26.4%	25.9%	27.1%	30.2%	41.6%	36.2%	35.4%
African American	60.1%	61.5%	44.6%	45.6%	43.1%	34.7%	39.0%	48.7%	45.9%	47.6%
White	37.4%	34.7%	21.0%	23.1%	23.7%	20.3%	23.7%	30.4%	27.4%	30.6%
Other Minority	47.4%	61.1%	29.3%	37.4%	28.3%	31.1%	32.6%	42.2%	38.5%	47.0%
Multi-Racial	51.5%	48.1%	26.1%	29.4%	26.8%	23.9%	26.3%	30.7%	35.0%	39.3%
Missing	57.5%	47.7%	35.6%	39.6%	41.5%	34.2%	40.3%	45.6%	38.7%	39.3%
Ethnicity										
Hispanic	45.6%	47.5%	30.9%	31.9%	31.7%	28.8%	31.7%	40.9%	40.2%	39.6%
Not Hispanic	42.0%	38.5%	22.9%	24.8%	25.1%	21.4%	25.5%	33.0%	29.7%	32.8%
Conventional Only										
All Applicants	45.1%	39.4%	21.8%	22.9%	24.7%	22.3%	26.4%	32.8%	30.2%	33.1%
Race										
Asian	40.3%	36.0%	24.1%	23.9%	24.4%	26.9%	30.8%	40.0%	35.8%	34.4%
African American	62.5%	67.4%	51.7%	44.1%	45.0%	37.7%	43.2%	51.9%	51.9%	55.6%
White	38.2%	34.2%	19.3%	20.7%	22.2%	20.2%	23.4%	29.0%	26.8%	29.8%
Other Minority	48.3%	65.3%	26.9%	35.0%	27.1%	34.5%	32.9%	39.5%	35.0%	48.3%
Multi-Racial	53.7%	50.1%	25.0%	24.7%	23.9%	24.0%	25.9%	38.5%	35.8%	41.0%
Missing	58.3%	45.0%	28.3%	32.4%	36.9%	32.9%	39.5%	44.4%	38.7%	39.3%
Ethnicity										
Hispanic	47.3%	49.2%	31.8%	30.1%	31.8%	30.1%	34.6%	43.1%	43.1%	42.1%
Not Hispanic	43.0%	38.5%	21.0%	21.9%	23.3%	21.1%	25.1%	31.5%	29.1%	32.2%

NOTE: First lien mortgage refinance loans for one-to-four family owner-occupied homes.

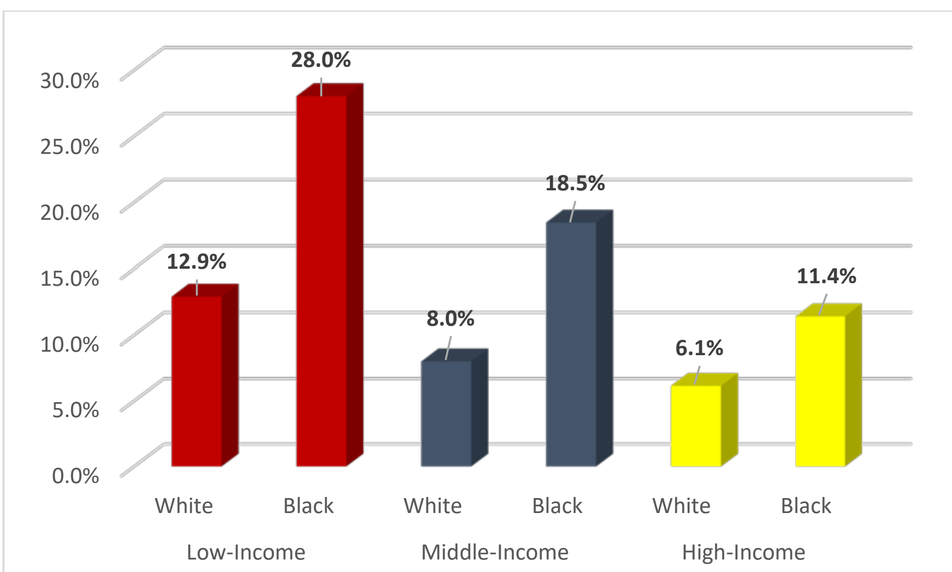
In the absence of other important loan and borrower characteristics, namely credit scores and debt-to-income, the denial rates should be treated cautiously. However, even after controlling for income levels, denial rates between white and African American applicants varied significantly. In 2016, less than seven percent of high-income white applicants were denied for a home purchase loan, while nearly 11 percent of high-income African-American applicants were denied for a mortgage in the same year. The difference between the denial rates of white and African-American applicants continues for low- and middle income borrowers. Of all the low-income white applicants who applied for a home purchase loan in 2016, 13.5 percent were denied, while 22.5 percent of low-income African American borrowers were denied for a loan. The following figure shows the denial rates of white and African American applicants separated by their income level.

Figure 13. Denial Rates by Race and Income of Applicant, Conventional and Nonconventional Home Purchase Loans, 2016



The difference between the denial rates of African American and white applicants separated by race is even more noticeable when only the conventional home purchase loan applications are included. In 2016, 13 percent of low-income white applicants were denied for a conventional home purchase loan while 28 percent of low-income African-American borrowers were denied. This is consistent with the trend of relatively higher portion of nonwhite applicants receiving nonconventional loans.

Figure 14. Denial Rates by Race and Income of Applicant, Conventional Home Purchase Loans, 2016



The denial rates for home purchase loans and refinance loans in 2016 separated by county and race are provided in Appendices G and H.

Financial institutions reporting to HMDA can report[28] up to three reasons for denial by choosing among nine[29] possible reasons when they deny an applicant. In 2016, among the applications for first-lien one- to four-family owner-occupied home purchase loans, financial institutions did not give any reason for 35 percent of applicants they denied. Credit history and debt-to-income (DTI) ratio were the most cited reasons for denials followed by collateral among the denied applications.

IX. HIGHER-PRICED LOANS

Institutions are also required to report the spread between the annual percentage rate (APR) and the average prime offer rate for a comparable transaction if the spread is equal to or greater than 1.5 percentage points for first-lien loans or 3.5 percentage points for junior lien loans for a home-purchase loan, a refinancing, or a dwelling-secured home improvement loan originated.[30] Higher-priced loans are defined as first-lien loans with an APR[31] of at least 1.5 percentage points above the average prime offer rate (APOR) for a similar type loan. For a junior-lien loan to be considered as higher priced, the spread between APR on the loan and APOR for a similar type loan must be at least 3.5-percentage points. For an "inexpensive" home, the ratio of all the up-front costs to loan amount can make a modest priced home purchase a "higher-priced loan."

A higher-priced mortgage loan will be more expensive than a mortgage with average terms, which requires lenders to take extra steps to make sure borrower can pay the loan back without defaulting. According to Consumer Financial Protection Bureau (CFPB), the originators who are offering higher-priced loans may have to obtain a full interior appraisal from a licensed or certified appraiser, provide a second appraisal of home for free, if it is a "flipped" home, or maintain an escrow account for at least five years.[32]

The following table compares the occurrence of higher-priced loans for the first-lien home purchase loans for one- to four-family owner-occupied homes by race and ethnicity of the applicants. According to the table, in 2016, the proportion of all home purchase loans (conventional and nonconventional) with interest rates above the threshold increased from the previous year for almost all race groups, except for the borrowers whose race information was not provided and Asian borrowers. In 2016, nearly seven percent of all borrowers received higher-priced loans. Thirteen percent of African-American borrowers received higher-priced loans, which was the highest among all racial categories. Only three

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[28] They are not required to report because it is optional except for institutions that are subject to Office of the Comptroller of the Currency (OCC) regulations or Federal Deposit Insurance Corporation (FDIC) regulations.

[29] Possible denial reasons include: debt-to-income ratio, employment history, credit history, collateral, insufficient cash (downpayment, closing costs), unverifiable information, credit application incomplete, mortgage insurance denied, and other

[30] To determine whether the rate spread meets this threshold, institutions use the average prime offer rate (APOR) in effect for the type of transaction as of the date the interest rate was set, and use the APR for the loan, as calculated and disclosed to the consumer. An application that is identified as "not applicable (NA)" could have a difference between the APR and the average prime offer rate that is less than 1.5 percentage points for a first-lien loan and less than 3.5 percentage points for a junior lien loan, it could be an application that did not result in origination, the loan is not subject to Regulation Z, the loan is a home improvement loan that is not dwelling-secured, or the loan is purchased by the financial institution.

[31] The APR for a mortgage loan is different than the interest rate on the loan, and it is a function of the costs of the mortgage loan added to the interest rate and re-amortized based on the size of the loan borrower is requesting.

[32] See Consumer Financial Protection Bureau at https://www.consumerfinance.gov/ask-cfpb/what-is-a-higher-priced-mortgage-loan-en-1797/

percent of home purchase loans originated for Asian borrowers in 2016 were considered higher priced, which was the lowest among all race categories.

In 2007, a relatively higher proportion of borrowers in every race category received higher-priced loans, but this proportion declined in the subsequent years. All borrowers in different race categories experienced a decline, but the largest decline was among the African American borrowers. In 2007, 34 percent of all African American borrowers received higher-priced loans, which was 19 percentage points lower than the previous year when more than half of all African American borrowers received higher-priced loans. In 2011, the percent of borrowers who received higher-priced loans began increasing again across all racial groups, though the trend is more evident among non-white borrowers. However, the longer term changes in the occurrence of higher-priced loans should be interpreted carefully due, in part, to changes in definition. Before 2009, if the spread between a mortgage's APR and the rate on a Treasury bond of comparable term, instead of the Average Prime Offer Rate (APOR), was greater than three (3) percentage points the loan was reported as a "higher-priced" loan. Additionally, for the years prior to 2009, the use of the rate on a Treasury bond of comparable term to determine the rate spread created inadvertent fluctuations in the spread over time.[33]

[33] For more information about the impact of rate spread rule changes, see See Bhutta, N, Steven Laufer, and Daniel R. Ringo (2017) "Residential Mortgage Lending in 2016: Evidence from the Home Mortgage Disclosure Act Data," forthcoming in the Federal Reserve Bulletin, accessed on 10/11/2017 at https://www.federalreserve.gov/publications/files/2016_HMDA.pdf

Table 12. Higher-Priced Loans, Conventional and Nonconventional Home Purchase Loans, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I. Home Purchase Loans										
Conventional and Nonconventional										
All Applicants	14.3%	9.4%	6.0%	3.8%	5.2%	6.8%	8.9%	9.7%	6.4%	6.7%
Race										
Asian	7.3%	5.0%	3.6%	2.3%	3.7%	4.2%	5.8%	7.4%	3.2%	3.0%
African American	33.5%	17.1%	5.9%	3.6%	9.1%	11.5%	17.7%	22.4%	10.9%	12.6%
White	11.8%	9.0%	6.3%	4.0%	5.0%	6.6%	8.5%	9.0%	6.3%	6.5%
Other Minority	24.7%	12.2%	4.5%	3.2%	5.1%	4.5%	10.7%	15.1%	6.7%	5.6%
Multi-Racial	8.8%	6.9%	4.0%	3.0%	4.3%	6.1%	8.9%	9.9%	7.0%	6.1%
Missing	15.6%	7.0%	3.1%	1.5%	3.3%	5.3%	6.4%	6.0%	3.6%	4.1%
Ethnicity										
Hispanic	20.2%	12.1%	6.1%	3.4%	6.3%	7.8%	11.4%	12.6%	8.3%	8.6%
Not Hispanic	14.0%	9.5%	6.2%	3.9%	5.3%	6.9%	8.9%	9.8%	6.4%	6.8%
Conventional Only										
All Applicants	16.6%	10.8%	10.1%	8.1%	7.3%	7.7%	7.1%	5.7%	5.8%	5.2%
Race										
Asian	7.8%	5.2%	4.3%	3.1%	3.3%	3.7%	3.5%	3.5%	2.3%	2.2%
African American	42.8%	25.4%	12.1%	16.3%	14.8%	8.1%	10.7%	8.8%	8.1%	7.5%
White	13.8%	10.6%	10.9%	8.4%	7.7%	8.2%	7.5%	5.8%	6.1%	5.5%
Other Minority	29.7%	17.0%	4.3%	4.6%	4.5%	5.5%	10.8%	12.9%	7.7%	5.8%
Multi-Racial	11.5%	9.8%	5.3%	7.0%	4.8%	6.4%	6.0%	5.3%	3.8%	4.9%
Missing	17.0%	6.3%	3.1%	1.8%	1.6%	2.7%	2.2%	1.8%	2.0%	2.0%
Ethnicity										
Hispanic	25.3%	18.2%	17.7%	12.4%	9.8%	11.7%	11.2%	8.9%	9.3%	9.4%
Not Hispanic	16.3%	10.9%	10.6%	8.4%	7.6%	7.9%	7.3%	5.8%	5.9%	5.2%
Nonconventional Only										
All Applicants	2.6%	7.5%	3.1%	0.8%	3.5%	6.0%	11.1%	15.0%	7.1%	8.5%
Race										
Asian	2.8%	4.0%	2.4%	0.9%	4.2%	5.2%	13.7%	20.0%	6.1%	6.4%
African American	5.9%	13.4%	4.9%	1.8%	7.9%	12.2%	19.9%	27.3%	11.7%	14.4%
White	1.7%	6.5%	2.9%	0.6%	2.8%	5.0%	9.8%	13.4%	6.6%	7.9%
Other Minority	1.9%	3.3%	4.9%	0.0%	6.2%	2.6%	10.5%	20.2%	4.8%	5.1%
Multi-Racial	0.9%	3.8%	3.2%	0.4%	4.0%	5.9%	11.5%	13.8%	9.6%	7.0%
Missing	6.1%	8.3%	3.2%	1.2%	4.9%	8.6%	13.4%	12.7%	5.6%	7.2%
Ethnicity										
Hispanic	1.7%	7.2%	2.2%	0.5%	5.0%	5.8%	11.5%	15.0%	7.6%	8.1%
Not Hispanic	2.4%	7.5%	3.2%	0.8%	3.4%	6.0%	11.0%	15.1%	7.1%	8.6%

NOTE: First lien home purchase loans originated for owner-occupied one-to-four family dwellings.

Before 2011, for almost all race categories, the borrowers who used conventional home purchase loans had a higher proportion of loans with interest rates higher than the spread threshold. However, in most recent years, the proportion of higher-priced loans for conventional and nonconventional loans was reversed. In 2014, borrowers in all race categories who purchased a home using nonconventional loans (including FHA, VA and FSA/RHS insured loans) had a higher occurrence of loans with interest rates above the spread reporting threshold. The trend continued in 2016, except for Hispanic borrowers and borrowers in the “other minority” category. For example, in 2016, 14.4 percent of African-American borrowers who received nonconventional mortgage loans (FHA-, VA- or RD-insured) had higher-priced loans while 7.5 percent of African American borrowers with conventional mortgage loans received higher-priced loans.

These patterns also differed by the type of nonconventional loan. Among nonconventional loans, borrowers who used VA or FSA/RHS insured loans received fewer higher-priced loans than borrowers with FHA-insured loans. The proportion of FHA insured higher-priced loans and the relative proportion across loan types increased substantially in recent years. For example, in 2007, over four percent of borrowers with FHA-insured loans had higher-priced loans while in the same year less than one percent of borrowers with VA- and RD-insured loans had higher-priced loans. The FHA percentage leapt to 20 percent in 2013 and again to 31 percent in 2014. All the while, the other nonconventional loan types saw negligible proportions of higher-priced loans.

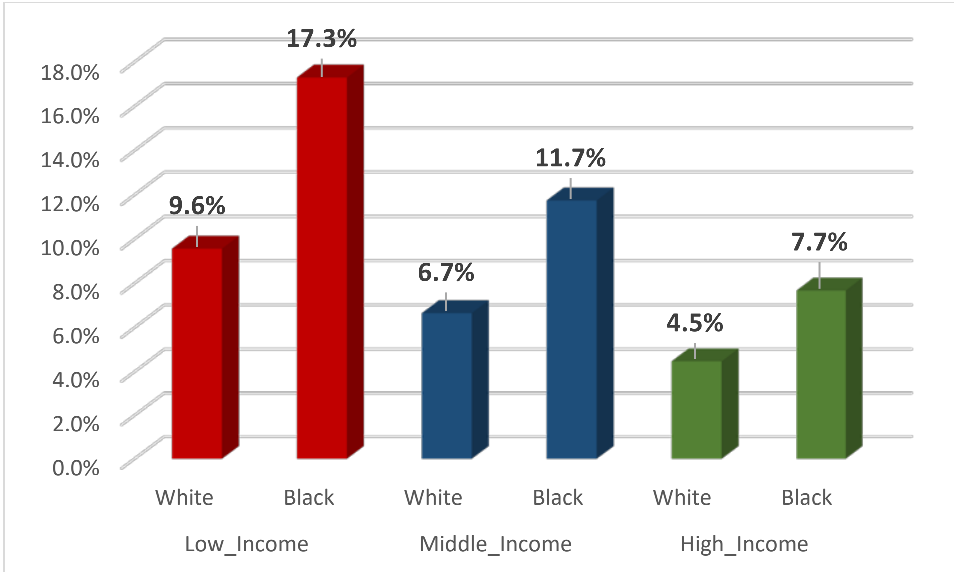
Increasing mortgage insurance premiums (MIP) on FHA insurance is one reason for the increase in higher-priced loans in recent years, because the monthly MIP on FHA-insured loans increases the APR for those loans. FHA decreased the MIP in January 2015, and it is likely an important factor in the reduction of higher-priced loans among borrowers with FHA-insured loans; however, the insurance is still required for the life of the loan. In 2015, of all FHA-insured loans, 11.6 percent were considered higher priced. In 2016, both FHA- and RD-insured loan borrowers experienced increases in the percentage of higher-priced loans, 14 percent and 3.5 percent respectively.

Table 13. Higher-Priced Loans, Nonconventional Home Purchase Loans, by Insurer, 2005-2014, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I. Home Purchase Loans										
FHA-Insured										
All Applicants	4.2%	9.6%	4.1%	1.0%	5.6%	10.2%	20.1%	30.8%	11.6%	14.0%
Race										
Asian	3.4%	4.5%	2.4%	1.0%	4.9%	6.2%	16.1%	26.6%	7.9%	8.2%
African American	8.7%	15.7%	5.9%	2.2%	10.8%	16.9%	27.2%	41.2%	16.0%	20.1%
White	2.8%	8.4%	3.8%	0.8%	4.6%	8.8%	18.6%	29.0%	10.9%	13.2%
Other Minority	6.3%	5.9%	7.1%	0.0%	11.5%	5.1%	21.1%	37.0%	12.2%	13.0%
Multi-Racial	1.8%	5.4%	4.8%	0.7%	8.4%	12.5%	28.3%	36.4%	17.9%	14.8%
Missing	10.0%	10.4%	4.3%	1.7%	7.9%	13.3%	22.6%	25.9%	9.8%	11.1%
Ethnicity										
Hispanic	3.0%	9.4%	3.2%	0.7%	8.0%	9.7%	20.2%	28.4%	11.9%	12.7%
Not Hispanic	4.0%	9.6%	4.1%	1.0%	5.5%	10.1%	19.9%	31.2%	11.6%	14.2%
VA-Insured										
All Applicants	0.1%	1.0%	0.8%	0.1%	0.1%	0.1%	0.1%	0.2%	0.6%	0.3%
Race										
Asian	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
African American	0.6%	3.2%	1.6%	0.2%	0.5%	0.2%	0.2%	0.3%	0.8%	0.4%
White	0.1%	0.8%	0.8%	0.1%	0.0%	0.1%	0.1%	0.2%	0.6%	0.3%
Other Minority	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Multi-Racial	0.0%	1.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.9%	0.8%	0.0%
Missing	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%
Ethnicity										
Hispanic	0.4%	0.0%	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.7%	0.0%
Not Hispanic	0.1%	1.1%	0.9%	0.1%	0.0%	0.1%	0.1%	0.3%	0.6%	0.3%
FSA/RHS-Insured										
All Applicants	0.5%	2.3%	0.8%	0.2%	0.1%	0.1%	1.5%	1.2%	3.1%	3.5%
Race										
Asian	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
African American	2.1%	2.9%	0.0%	0.0%	0.0%	0.0%	2.5%	1.4%	4.1%	3.9%
White	0.4%	2.4%	0.9%	0.2%	0.1%	0.1%	1.4%	1.2%	3.0%	3.5%
Other Minority	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	14.3%	0.0%	0.0%
Multi-Racial	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	8.0%	5.1%
Missing	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	5.6%	0.7%	3.4%	6.0%
Ethnicity										
Hispanic	0.0%	2.4%	0.0%	0.0%	0.0%	0.0%	2.3%	1.3%	1.4%	2.8%
Not Hispanic	0.5%	2.4%	0.8%	0.2%	0.1%	0.1%	1.4%	1.2%	3.1%	3.5%

The proportion of African American borrowers who received higher-priced loans was higher than the white borrowers, even among borrowers in the same income group. The difference between white and African American borrowers with higher-priced loans was greater among the low-income borrowers. More than 17 percent of low-income African-American borrowers paid interest rates higher than the threshold level in 2016, while less than 10 percent of low-income white borrowers' home purchase loans were considered higher priced.

Figure 15. Percent of White and Black Borrowers with Higher-Priced Loans by Income Level, 2016



The following table provides the proportion of higher-priced refinance loans. The proportion of higher-priced refinance loans increased in 2016 for all borrowers, but borrowers in different race categories have different outcomes. For African-American and white borrowers and borrowers without race information proportion of higher-priced loans in total loans they received declined while for other race categories there were increases in varying magnitudes.

Table 14. Higher-Priced Loans, Conventional and Nonconventional Refinance Loans, 2007-2016, Tennessee

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
II. Refinance Loans										
Conventional and Nonconventional										
All Applicants	29.1%	18.8%	7.3%	4.2%	4.6%	3.6%	4.4%	6.8%	4.9%	4.2%
Race										
Asian	17.7%	6.1%	2.3%	1.0%	0.9%	1.2%	1.9%	3.0%	1.7%	2.0%
African American	48.4%	32.3%	13.1%	8.3%	7.3%	4.9%	4.8%	6.6%	6.3%	5.4%
White	26.2%	18.2%	7.4%	4.2%	4.8%	3.8%	4.6%	7.4%	5.1%	4.3%
Other Minority	37.3%	13.9%	5.2%	4.3%	4.9%	2.6%	5.2%	8.2%	3.6%	4.6%
Multi-Racial	29.7%	12.7%	5.0%	2.2%	2.9%	2.0%	3.6%	2.7%	2.5%	3.6%
Missing	30.7%	15.0%	4.4%	2.0%	1.7%	1.0%	1.8%	2.7%	2.7%	2.4%
Ethnicity										
Hispanic	28.3%	16.0%	6.5%	3.8%	3.2%	2.6%	3.9%	2.7%	3.1%	3.4%
Not Hispanic	29.0%	19.2%	7.6%	4.3%	4.9%	3.8%	4.6%	6.8%	5.1%	4.4%
Conventional Only										
All Applicants	31.3%	19.7%	7.6%	4.1%	4.4%	3.5%	4.3%	6.4%	4.5%	3.8%
Race										
Asian	19.0%	6.6%	2.2%	1.0%	0.8%	1.4%	1.8%	1.7%	1.7%	1.3%
African American	56.2%	43.1%	19.1%	7.8%	7.3%	4.8%	4.8%	5.4%	5.4%	4.5%
White	28.1%	19.2%	7.8%	4.3%	4.7%	3.8%	4.6%	7.0%	4.8%	4.1%
Other Minority	39.9%	14.4%	5.2%	4.1%	4.0%	2.6%	4.8%	7.0%	3.7%	4.0%
Multi-Racial	33.7%	12.2%	4.2%	2.2%	2.3%	1.5%	2.9%	2.3%	1.7%	2.4%
Missing	32.4%	11.5%	2.4%	1.0%	0.9%	1.0%	1.8%	2.0%	1.6%	1.4%
Ethnicity										
Hispanic	32.0%	16.7%	7.3%	3.7%	2.6%	2.6%	4.1%	4.2%	2.5%	2.8%
Not Hispanic	31.4%	20.5%	8.0%	4.3%	4.7%	3.7%	4.5%	7.1%	4.7%	4.0%

NOTE: First lien refinance loans originated for owner-occupied one-to-four family dwellings.

PART B. THDA SHARE OF HOME PURCHASE LOAN MARKET

I. Home Loan Market Share of THDA

In this report, we also measured THDA's share in the home loan market. Market share refers to the proportion of loans funded by THDA to all home purchase loans originated by financial institutions and reported in Tennessee. Knowing THDA's share in the home loan market is important in determining how competitive THDA loan products are compared to the other similar loan products available in the market. Knowledge of where THDA's business is relative to the market is also useful when making decisions around marketing and planning to fill unmet need.

Using HMDA data to measure THDA's share in the home loan market presents some limitations because of the nature of the HMDA data and THDA's loan program eligibility requirements. As explained previously, HMDA does not require all lenders to report mortgage information, so the data may not represent a complete inventory of loans made, especially in small rural counties. Additionally, THDA loan eligibility is subject to income and purchase price limits, and, in approximately a third of the state's counties, loan eligibility is limited to first time homebuyers[34].

To compare similar loan products between THDA and those within the HMDA data set, we limited the HMDA loans to those with borrowers meeting the income limits and the purchase price limits using the assumptions explained further in ***Appendix I***. Additionally, because HMDA has the loan amount rather than purchase price, the purchase price was estimated using the price of the home by assuming a four percent downpayment. There is not a first time homebuyer indicator in HMDA so that limitation is not reflected. All told, this means that the loan counts used are likely to under/overestimate THDA's participation in the market. However, despite these limitations, this is a useful comparison to examine our loan market participation.

Keeping these limitations in mind[35], THDA's market share for 2016 was estimated. Because the majority of THDA loans are FHA-insured, comparing THDA FHA mortgage loans to FHA-insured loans in the market provides a more accurate estimate of THDA's share in the home mortgage loan market.

In 2016, there were 15,529 FHA-insured first lien home purchase loans originated for owner-occupied one- to four-family dwellings that met THDA's purchase price and income limit requirements. During the same time period, THDA funded 1,894 FHA-insured loans, or 12.2 percent of the market. This share is down from the 15.2 percent in 2015, due in part to the declining number of THDA borrowers in 2016. THDA funded FHA-insured loans declined by 12 percent in 2016 compared to 2015, while in the market, all lenders reporting to HMDA originated nine percent more FHA-insured loans compared to the previous year for borrowers estimated to be THDA-eligible.

THDA's 2016 share in FHA-insured loans market varied by county from zero percent in the counties where THDA did not fund any FHA-insured loans to 31 percent in Lauderdale County where THDA funded nine FHA-insured loans. THDA was able to attract 12 percent or more of the potential FHA borrowers in each of Davidson, Hamilton, Knox, Montgomery and Rutherford Counties, while THDA's market share was relatively low in Williamson and Shelby Counties. THDA funded FHA-insured loans

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[34] First-time homeownership requirement is waived in the fully targeted economically distressed counties and qualified census tracts in addition to the Veterans who are using THDA loan products.

[35] The limitations and assumptions are further explained in Appendix I.

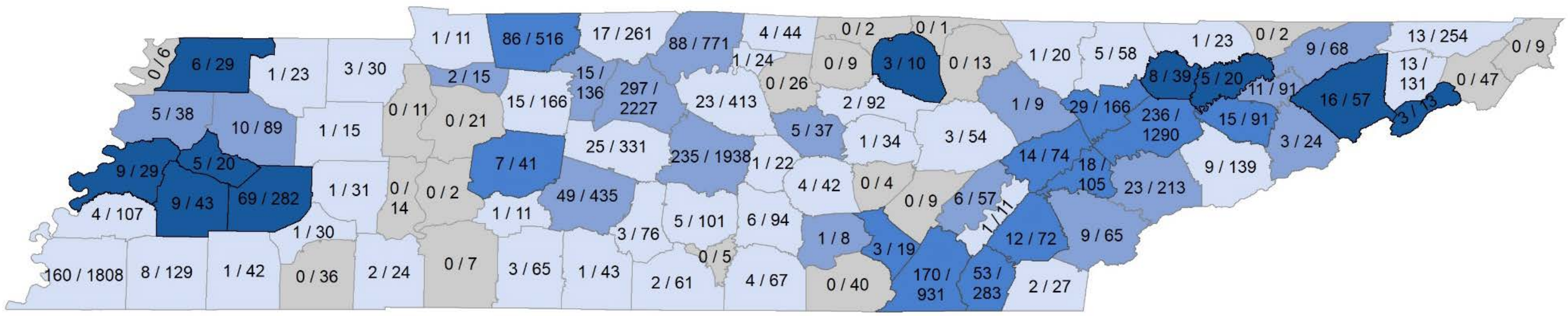
were 12 percent of comparable FHA-insured loans reported in Rutherford County and 13 percent in Davidson County. THDA's market share in both Rutherford and Davidson Counties declined from 2015. In Davidson County, both the number of FHA-insured THDA loans funded and comparable FHA-insured loans originated in the market declined compared to the previous year, but the decline in FHA-insured THDA loans funded was greater than the decline in the market loans originated. In Rutherford County, the number of FHA-insured THDA loans declined while the comparable FHA-insured loans originated in the market increased from 2015.

THDA's market share in the FHA-insured loans market declined in 54 counties and increased in 29 counties, while the balance of counties were unchanged. THDA's largest annual market share gains were primarily in small rural counties with relatively small mortgage loan markets. In all large counties of the Nashville MSA, THDA's reach to the potential FHA-insured mortgage loan borrowers declined. Only in Dickson and Hickman Counties of Nashville MSA, THDA enjoyed increasing market shares in 2016 compared to 2015. In the Memphis MSA, THDA's Shelby County annual market share declined. The number of FHA-insured THDA funded loans in the county declined while the number of potential THDA borrowers increased, which led to a more than four percentage point decline in THDA's market share in the county's FHA-insured loan market.

THDA's shares in FHA-insured mortgage loans market in 2015 and 2016 by county can be found in Appendix J.

The following map displays THDA's share in the FHA-insured loans market in 2016.

Map 3: THDA's Share in FHA-Insured Home Loans Market, 2016[36]



Numeric Values within each County = THDA FHA-Insured Loans / Total FHA-Insured Loans

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[36] The FHA-insured home loan market refers to the first-lien home purchase loans for owner-occupied 1-4 family dwellings that are originated in 2016 by financial institutions and reported in HMDA data. Only the FHA-insured loans to the borrowers who would be eligible to receive FHA-insured THDA loans based on their income, which was less than or equal to the large family (households with three or more people) income limit of the county they purchased their homes, and purchased homes that are less than or equal to THDA's purchase price limit (estimated by adding a four percent downpayment amount to the loan amount) are included. THDA changed the income limits effective June 11, 2016. Publicly available HMDA data do not have full loan origination dates other than the year of origination. Therefore, for all loans in 2016, we used the income limits started in June 2016.

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APPENDIX

APPENDIX A

First Lien, Owner-Occupied, 1-4 Family Loans Originated

	Home Purchase		Refinance	
	2016	**2015**	**2016**	**2015**
Anderson	784	664	606	548
Bedford	555	465	349	275
Benton	70	65	82	88
Bledsoe	61	55	94	57
Blount	1,701	1,502	1,333	1,138
Bradley	1,192	1,020	830	747
Campbell	290	222	239	223
Cannon	114	115	116	99
Carroll	158	147	151	129
Carter	413	367	313	312
Cheatham	595	517	473	391
Chester	162	146	117	99
Claiborne	192	196	124	115
Clay	34	27	21	21
Cocke	134	138	151	134
Coffee	560	471	350	326
Crockett	84	101	80	72
Cumberland	515	440	468	414
Davidson	10,398	10,052	8,019	6,615
Decatur	75	64	75	65
DeKalb	186	138	103	106
Dickson	698	617	474	432
Dyer	295	280	209	193
Fayette	622	526	459	378
Fentress	95	87	91	77
Franklin	328	297	323	300
Gibson	431	366	259	266
Giles	204	215	188	139
Grainger	126	122	147	129
Greene	481	426	444	373
Grundy	71	70	79	75
Hamblen	600	512	482	423
Hamilton	4,839	4,262	3,129	2,773
Hancock	21	27	16	21
Hardeman	131	83	98	92
Hardin	159	174	150	129
Hawkins	411	386	354	361

First Lien, Owner-Occupied, 1-4 Family Loans Originated

	Home Purchase		Refinance	
	2016	**2015**	**2016**	**2015**
Haywood	91	80	91	82
Henderson	188	164	183	145
Henry	198	205	171	159
Hickman	192	185	129	119
Houston	66	47	55	46
Humphreys	152	121	105	115
Jackson	63	52	56	55
Jefferson	443	462	396	376
Johnson	66	51	83	62
Knox	6,870	6,003	4,517	4,045
Lake	17	11	20	26
Lauderdale	111	112	129	113
Lawrence	337	270	238	201
Lewis	62	51	72	74
Lincoln	313	248	260	218
Loudon	742	622	579	464
Macon	226	183	132	105
Madison	965	829	671	585
Marion	175	166	210	191
Marshall	441	393	267	200
Maury	1,717	1,430	998	803
McMinn	459	381	343	294
McNairy	169	152	161	157
Meigs	63	77	73	66
Monroe	344	278	288	261
Montgomery	3,877	3,237	2,157	1,820
Moore	53	37	43	45
Morgan	90	110	131	106
No County Name	41	25	39	17
Obion	163	156	143	153
Overton	91	90	71	59
Perry	17	12	26	28
Pickett	7	12	20	26
Polk	96	82	100	109
Putnam	625	623	471	429
Rhea	237	208	218	196
Roane	495	407	461	395
Robertson	1,092	954	800	684
Rutherford	6,054	5,199	3,995	3,338

First Lien, Owner-Occupied, 1-4 Family Loans Originated	Home Purchase		Refinance	
	2016	2015	2016	2015
Scott	133	97	92	105
Sequatchie	124	108	159	103
Sevier	984	846	807	710
Shelby	7,817	6,901	6,107	5,204
Smith	186	168	116	117
Stewart	85	89	99	91
Sullivan	1,592	1,530	1,044	1,023
Sumner	3,409	3,077	2,585	2,107
Tipton	590	485	584	520
Trousdale	87	84	58	44
Unicoi	137	99	102	93
Union	149	134	98	115
Van Buren	35	23	34	37
Warren	250	215	216	210
Washington	1,499	1,408	1,006	878
Wayne	55	42	77	48
Weakley	166	178	181	169
White	204	200	145	130
Williamson	5,123	5,010	4,604	3,668
Wilson	2,464	2,391	2,084	1,729
TENNESSEE	80,282	72,172	60,096	51,603

APPENDIX B

First Lien, Owner-Occupied, Home Purchase Loans Originated for 1-4 Family Dwellings

COUNTY	Conventional	FHA	VA	FSA/RHS	ALL
Anderson	374	213	114	83	784
Bedford	205	142	52	156	555
Benton	26	15	11	18	70
Bledsoe	31	14	10	6	61
Blount	832	341	211	317	1,701
Bradley	546	396	130	120	1,192
Campbell	112	67	28	83	290
Cannon	51	26	13	24	114
Carroll	73	23	17	45	158
Carter	234	57	46	76	413
Cheatham	261	175	67	92	595
Chester	68	37	14	43	162
Claiborne	106	28	22	36	192
Clay	20	2	5	7	34
Cocke	50	29	25	30	134
Coffee	220	134	92	114	560
Crockett	37	27	6	14	84
Cumberland	251	74	103	87	515
Davidson	7,273	2,637	484	4	10,398
Decatur	27	22	14	12	75
DeKalb	79	44	17	46	186
Dickson	293	186	67	152	698
Dyer	132	57	27	79	295
Fayette	319	159	78	66	622
Fentress	39	17	21	18	95
Franklin	149	80	41	58	328
Gibson	190	115	32	94	431
Giles	74	52	27	51	204
Grainger	72	23	18	13	126
Greene	242	71	61	107	481
Grundy	44	9	1	17	71
Hamblen	268	120	52	160	600
Hamilton	2,918	1,328	431	162	4,839
Hancock	16	2	1	2	21
Hardeman	45	48	12	26	131
Hardin	66	29	15	49	159
Hawkins	212	79	42	78	411

First Lien, Owner-Occupied, Home Purchase Loans Originated for 1-4 Family Dwellings

COUNTY	Conventional	FHA	VA	FSA/RHS	ALL
Haywood	21	46	13	11	91
Henderson	78	36	22	52	188
Henry	98	38	34	28	198
Hickman	67	52	21	52	192
Houston	28	16	8	14	66
Humphreys	61	29	22	40	152
Jackson	22	12	11	18	63
Jefferson	196	104	55	88	443
Johnson	40	9	10	7	66
Knox	4,179	1,763	643	285	6,870
Lake	4	7	1	5	17
Lauderdale	35	38	10	28	111
Lawrence	160	76	32	69	337
Lewis	20	14	7	21	62
Lincoln	117	71	43	82	313
Loudon	448	122	71	101	742
Macon	112	46	17	51	226
Madison	476	331	88	70	965
Marion	81	45	16	33	175
Marshall	174	118	40	109	441
Maury	890	578	177	72	1,717
McMinn	199	100	55	105	459
McNairy	67	42	22	38	169
Meigs	31	13	13	6	63
Monroe	147	74	50	73	344
Montgomery	708	668	2,463	38	3,877
Moore	26	8	9	10	53
Morgan	42	12	14	22	90
No County Name	38	0	2	1	41
Obion	63	36	17	47	163
Overton	44	14	10	23	91
Perry	9	4	1	3	17
Pickett	2	1	2	2	7
Polk	38	34	10	14	96
Putnam	337	130	76	82	625
Rhea	94	64	37	42	237
Roane	225	117	66	87	495
Robertson	459	311	150	172	1,092
Rutherford	2,856	2,297	707	194	6,054

First Lien, Owner-Occupied, Home Purchase Loans Originated for 1-4 Family Dwellings

COUNTY	Conventional	FHA	VA	FSA/RHS	ALL
Scott	81	24	6	22	133
Sequatchie	63	21	17	23	124
Sevier	477	211	123	173	984
Shelby	4,325	2,691	747	54	7,817
Smith	92	38	19	37	186
Stewart	24	13	38	10	85
Sullivan	1,077	314	162	39	1,592
Sumner	1,796	954	382	277	3,409
Tipton	177	149	138	126	590
Trousdale	35	26	11	15	87
Unicoi	71	19	16	31	137
Union	69	43	4	33	149
Van Buren	22	4	4	5	35
Warren	91	56	31	72	250
Washington	1,030	210	165	94	1,499
Wayne	32	11	4	8	55
Weakley	72	33	17	44	166
White	86	37	18	63	204
Williamson	4,187	641	250	45	5,123
Wilson	1,450	577	272	165	2,464
TENNESSEE	43,904	20,426	9,876	6,076	80,282

APPENDIX C

Methodology for Determining Combined Race Categories

In this report, we identified and defined the racial groups in the following way (these are combined race categories considering both applicant and co-applicant, if any, and all the racial groups, up to five, reported):

- White – Both applicant and co-applicant are white and no other race reported, or the applicant is white and there is no co-applicant
- Black – Both applicant and co-applicant are black and no other race reported, or the applicant is black and there is no co-applicant
- Asian – Both applicant and co-applicant are Asian and no other race reported, or the applicant is Asian and there is no co-applicant
- Multiracial – Both applicant and co-applicant are of different races or either applicant or co-applicant are multiracial, meaning at least one applicant reports more than one race
- Other minority – Both the applicant and co-applicant are American Indian or Alaska Native, Native Hawaiian or other Pacific Islander and no other race reported or the applicant is American Indian or Alaska Native, Native Hawaiian or other Pacific Islander and there is no co-applicant
- Missing – Race information for both applicant and co-applicant, if any, is reported as either "information not provided" or "not applicable."

We treated the borrower's ethnicity separately rather than combining as "race and ethnicity." According to our classification, a borrower is Hispanic or Latino if the applicant or co applicant is identified as Hispanic or Latino. If neither the applicant nor the co-applicant is Hispanic or Latino, then the borrower is categorized as not Hispanic or Latino. The information is missing if ethnicity is not provided or not applicable for both applicant and co-applicant, if there is any.

APPENDIX D

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Anderson	734	11	4	3	4	28	784
Bedford	492	20	3	7	9	24	555
Benton	67	0	0	0	1	2	70
Bledsoe	56	1	0	0	1	3	61
Blount	1,570	16	11	3	15	86	1,701
Bradley	1,082	31	10	2	17	50	1,192
Campbell	270	1	1	1	0	17	290
Cannon	109	0	0	0	1	4	114
Carroll	149	3	1	0	2	3	158
Carter	389	3	1	3	0	17	413
Cheatham	554	5	1	2	4	29	595
Chester	147	5	1	2	2	5	162
Claiborne	184	1	1	1	1	4	192
Clay	30	0	0	1	0	3	34
Cocke	123	2	1	1	2	5	134
Coffee	507	15	5	0	4	29	560
Crockett	76	4	0	1	0	3	84
Cumberland	481	0	1	4	6	23	515
Davidson	7,865	945	366	18	173	1,031	10,398
Decatur	73	1	1	0	0	0	75
DeKalb	175	1	0	2	2	6	186
Dickson	647	5	1	4	10	31	698
Dyer	267	11	1	3	4	9	295
Fayette	499	80	3	1	9	30	622
Fentress	89	0	0	1	1	4	95
Franklin	302	8	2	1	3	12	328
Gibson	385	23	3	0	2	18	431
Giles	185	9	0	3	0	7	204
Grainger	118	1	0	1	0	6	126
Greene	452	2	2	7	3	15	481
Grundy	69	0	0	1	0	1	71
Hamblen	557	10	3	2	4	24	600
Hamilton	4,099	264	73	12	63	328	4,839
Hancock	18	0	0	2	0	1	21
Hardeman	101	25	1	0	0	4	131
Hardin	145	1	0	1	1	11	159
Hawkins	388	2	0	8	1	12	411
Haywood	51	36	0	1	2	1	91
Henderson	180	5	0	0	1	2	188
Henry	176	7	0	1	4	10	198
Hickman	183	0	0	3	0	6	192
Houston	62	0	0	1	0	3	66
Humphreys	137	4	0	1	3	7	152

First-lien, Owner-Occupied, 1-4 Family, Home Purchase Loan Originations by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Jackson	60	0	0	1	0	2	63
Jefferson	417	3	2	3	3	15	443
Johnson	61	0	0	1	1	3	66
Knox	6,177	192	116	20	89	276	6,870
Lake	13	3	0	0	0	1	17
Lauderdale	87	21	1	0	1	1	111
Lawrence	316	3	0	2	2	14	337
Lewis	56	0	1	2	1	2	62
Lincoln	283	9	1	2	1	17	313
Loudon	683	5	3	4	10	37	742
Macon	213	1	1	0	1	10	226
Madison	717	182	14	6	14	32	965
Marion	156	7	1	1	4	6	175
Marshall	403	6	4	4	4	20	441
Maury	1,485	72	11	7	18	124	1,717
McMinn	417	11	1	6	2	22	459
McNairy	153	9	0	0	1	6	169
Meigs	55	0	0	0	1	7	63
Monroe	322	2	0	2	2	16	344
Montgomery	2,966	439	49	49	145	229	3,877
Moore	50	0	0	1	1	1	53
Morgan	88	0	0	0	0	2	90
NA	14	1	24	0	0	2	41
Obion	151	7	1	0	0	4	163
Overton	88	0	0	1	2	0	91
Perry	14	0	0	0	0	3	17
Pickett	7	0	0	0	0	0	7
Polk	89	0	0	0	1	6	96
Putnam	574	5	10	3	16	17	625
Rhea	228	2	0	1	2	4	237
Roane	454	9	2	4	8	18	495
Robertson	982	35	5	6	17	47	1,092
Rutherford	4,850	547	178	19	138	322	6,054
Scott	119	1	0	2	0	11	133
Sequatchie	111	1	1	0	2	9	124
Sevier	929	4	9	5	9	28	984
Shelby	5,162	1,816	266	17	158	398	7,817
Smith	176	0	1	1	1	7	186
Stewart	79	1	0	0	1	4	85
Sullivan	1,488	17	10	8	18	51	1,592
Sumner	2,994	149	32	4	42	188	3,409
Tipton	518	43	3	0	14	12	590
Trousdale	76	4	0	0	4	3	87
Unicoi	131	0	0	2	0	4	137
Union	137	1	1	0	0	10	149
Van Buren	35	0	0	0	0	0	35

First-lien, Owner-Occupied, 1-4 Family, Home Purchase Loan Originations by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Warren	230	7	2	3	1	7	250
Washington	1,385	21	13	4	16	60	1,499
Wayne	43	0	0	10	1	1	55
Weakley	153	5	0	0	5	3	166
White	188	4	0	2	3	7	204
Williamson	4,230	107	249	17	76	444	5,123
Wilson	2,138	91	49	15	31	140	2,464
TENNESSEE	67,194	5,401	1,558	340	1,222	4,567	80,282

APPENDIX E

First-lien, Owner-Occupied, 1-4 Family, *Refinance* Loan Originations, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Anderson	535	12	0	0	5	54	606
Bedford	289	13	1	5	2	39	349
Benton	77	0	0	0	0	5	82
Bledsoe	89	1	0	0	0	4	94
Blount	1,145	22	3	2	19	142	1,333
Bradley	742	16	2	1	11	58	830
Campbell	209	0	1	1	0	28	239
Cannon	111	0	0	0	0	5	116
Carroll	135	4	0	1	1	10	151
Carter	274	3	0	1	2	33	313
Cheatham	426	5	1	1	4	36	473
Chester	102	6	0	0	1	8	117
Claiborne	112	0	1	0	1	10	124
Clay	17	0	0	1	2	1	21
Cocke	128	1	0	1	3	18	151
Coffee	305	5	1	1	9	29	350
Crockett	70	4	0	1	0	5	80
Cumberland	425	2	0	1	6	34	468
Davidson	5,619	1,147	145	24	102	982	8,019
Decatur	66	0	1	0	0	8	75
DeKalb	89	2	0	0	0	12	103
Dickson	403	8	1	1	6	55	474
Dyer	172	15	0	2	0	20	209
Fayette	354	54	1	2	5	43	459
Fentress	80	0	0	1	0	10	91
Franklin	261	7	0	5	5	45	323
Gibson	220	17	1	1	4	16	259
Giles	162	3	1	2	3	17	188
Grainger	137	0	0	0	0	10	147
Greene	397	4	0	5	4	34	444
Grundy	72	0	0	0	0	7	79
Hamblen	412	13	2	5	8	42	482
Hamilton	2,452	284	24	15	44	310	3,129
Hancock	16	0	0	0	0	0	16
Hardeman	67	21	1	0	1	8	98
Hardin	123	2	0	2	1	22	150
Hawkins	321	3	1	2	3	24	354
Haywood	49	31	0	0	1	10	91

First-lien, Owner-Occupied, 1-4 Family, *Refinance* Loan Originations, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Henderson	163	6	1	1	0	12	183
Henry	154	2	1	0	1	13	171
Hickman	109	1	0	3	0	16	129
Houston	44	0	0	1	1	9	55
Humphreys	92	0	1	1	0	11	105
Jackson	45	0	0	3	1	7	56
Jefferson	353	7	1	2	4	29	396
Johnson	76	0	0	1	0	6	83
Knox	3,791	162	45	13	44	462	4,517
Lake	18	2	0	0	0	0	20
Lauderdale	84	26	1	1	1	16	129
Lawrence	212	0	1	1	2	22	238
Lewis	55	0	0	0	2	15	72
Lincoln	226	8	0	3	5	18	260
Loudon	516	7	2	1	2	51	579
Macon	121	1	0	0	0	10	132
Madison	459	132	7	3	11	59	671
Marion	190	3	0	0	3	14	210
Marshall	230	6	0	2	2	27	267
Maury	827	58	3	2	13	95	998
McMinn	302	5	5	4	3	24	343
McNairy	139	6	0	1	1	14	161
Meigs	69	0	0	0	0	4	73
Monroe	261	2	1	1	3	20	288
Montgomery	1,414	386	21	23	72	241	2,157
Moore	33	3	0	1	0	6	43
Morgan	123	0	0	0	0	8	131
NA	19	7	13	0	0	0	39
Obion	128	4	0	0	2	9	143
Overton	65	0	0	0	0	6	71
Perry	24	0	0	0	0	2	26
Pickett	18	0	0	0	1	1	20
Polk	88	0	1	0	1	10	100
Putnam	408	3	9	1	5	45	471
Rhea	180	1	0	2	2	33	218
Roane	415	10	2	0	3	31	461
Robertson	652	24	5	4	17	98	800
Rutherford	3,088	344	67	9	57	430	3,995
Scott	81	0	0	0	0	11	92
Sequatchie	134	0	1	1	0	23	159
Sevier	707	4	8	2	7	79	807

First-lien, Owner-Occupied, 1-4 Family, *Refinance* Loan Originations, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Shelby	3,666	1,518	167	18	89	649	6,107
Smith	106	1	0	1	1	7	116
Stewart	84	1	0	1	2	11	99
Sullivan	902	15	1	1	9	116	1,044
Sumner	2,140	107	21	6	25	286	2,585
Tipton	476	50	2	2	6	48	584
Trousdale	51	3	0	0	0	4	58
Unicoi	91	0	0	0	0	11	102
Union	83	0	0	0	2	13	98
Van Buren	33	0	0	0	0	1	34
Warren	194	5	0	2	1	14	216
Washington	867	19	7	3	17	93	1,006
Wayne	71	0	0	1	0	5	77
Weakley	155	7	0	3	2	14	181
White	122	2	0	1	3	17	145
Williamson	3,746	109	130	16	44	559	4,604
Wilson	1,693	74	39	15	29	234	2,084
TENNESSEE	47,256	4,836	751	241	749	6,263	60,096

APPENDIX F

Ratio Of Non-Conventional Loan Borrowers In Total Borrowers, by Race, 2016

COUNTY	Asian	Black	White	Other Minority	Multi-Racial	Missing	ALL
Anderson	51.8%	72.7%	50.0%	33.3%	50.0%	60.7%	52.3%
Bedford	62.2%	95.0%	66.7%	28.6%	77.8%	58.3%	63.1%
Benton	61.2%	--	--	--	100.0%	100.0%	62.9%
Bledsoe	50.0%	0.0%	--	--	0.0%	66.7%	49.2%
Blount	51.1%	68.8%	27.3%	0.0%	60.0%	51.2%	51.1%
Bradley	54.6%	58.1%	10.0%	0.0%	64.7%	50.0%	54.2%
Campbell	61.9%	100.0%	0.0%	0.0%	--	58.8%	61.4%
Cannon	54.1%	--	--	--	100.0%	75.0%	55.3%
Carroll	54.4%	66.7%	0.0%	--	100.0%	0.0%	53.8%
Carter	44.0%	100.0%	0.0%	0.0%	--	29.4%	43.3%
Cheatham	56.5%	80.0%	0.0%	50.0%	25.0%	51.7%	56.1%
Chester	57.8%	80.0%	100.0%	0.0%	50.0%	60.0%	58.0%
Claiborne	45.1%	0.0%	0.0%	0.0%	0.0%	75.0%	44.8%
Clay	46.7%	--	--	0.0%	--	0.0%	41.2%
Cocke	60.2%	100.0%	100.0%	0.0%	100.0%	100.0%	62.7%
Coffee	60.0%	80.0%	40.0%	--	100.0%	62.1%	60.7%
Crockett	55.3%	100.0%	--	0.0%	--	33.3%	56.0%
Cumberland	52.0%	--	0.0%	0.0%	83.3%	39.1%	51.3%
Davidson	26.6%	66.9%	18.3%	61.1%	37.0%	25.0%	30.1%
Decatur	63.0%	100.0%	100.0%	--	--	--	64.0%
DeKalb	58.9%	100.0%	--	0.0%	50.0%	33.3%	57.5%
Dickson	58.7%	40.0%	0.0%	25.0%	40.0%	58.1%	58.0%
Dyer	53.2%	81.8%	0.0%	33.3%	50.0%	100.0%	55.3%
Fayette	45.5%	67.5%	66.7%	0.0%	77.8%	43.3%	48.7%
Fentress	59.6%	--	--	0.0%	100.0%	50.0%	58.9%
Franklin	54.6%	62.5%	50.0%	0.0%	66.7%	50.0%	54.6%
Gibson	55.3%	69.6%	33.3%	--	100.0%	50.0%	55.9%
Giles	61.6%	100.0%	--	33.3%	--	85.7%	63.7%
Grainger	43.2%	100.0%	--	0.0%	--	33.3%	42.9%
Greene	50.2%	100.0%	50.0%	0.0%	33.3%	53.3%	49.7%
Grundy	37.7%	--	--	0.0%	--	100.0%	38.0%
Hamblen	54.8%	70.0%	0.0%	0.0%	75.0%	70.8%	55.3%
Hamilton	37.7%	78.0%	20.5%	41.7%	52.4%	35.4%	39.7%
Hancock	27.8%	--	--	0.0%	--	0.0%	23.8%
Hardeman	61.4%	80.0%	100.0%	--	--	75.0%	65.6%
Hardin	61.4%	100.0%	--	0.0%	0.0%	27.3%	58.5%
Hawkins	48.7%	50.0%	--	12.5%	100.0%	58.3%	48.4%
Haywood	72.5%	83.3%	--	100.0%	50.0%	100.0%	76.9%

Ratio Of Non-Conventional Loan Borrowers In Total Borrowers, by Race, 2016

COUNTY	Asian	Black	White	Other Minority	Multi-Racial	Missing	ALL
Henderson	57.2%	100.0%	--	--	100.0%	50.0%	58.5%
Henry	50.6%	57.1%	--	0.0%	50.0%	50.0%	50.5%
Hickman	65.6%	--	--	33.3%	--	66.7%	65.1%
Houston	56.5%	--	--	100.0%	--	66.7%	57.6%
Humphreys	59.1%	100.0%	--	0.0%	100.0%	42.9%	59.9%
Jackson	66.7%	--	--	0.0%	--	50.0%	65.1%
Jefferson	55.6%	100.0%	50.0%	0.0%	66.7%	60.0%	55.8%
Johnson	41.0%	--	--	0.0%	100.0%	0.0%	39.4%
Knox	38.9%	65.6%	14.7%	25.0%	27.0%	43.1%	39.2%
Lake	69.2%	100.0%	--	--	--	100.0%	76.5%
Lauderdale	66.7%	76.2%	0.0%	--	100.0%	100.0%	68.5%
Lawrence	52.5%	100.0%	--	50.0%	100.0%	35.7%	52.5%
Lewis	71.4%	--	0.0%	0.0%	100.0%	50.0%	67.7%
Lincoln	62.5%	88.9%	0.0%	0.0%	100.0%	58.8%	62.6%
Loudon	39.8%	100.0%	0.0%	0.0%	30.0%	37.8%	39.6%
Macon	51.2%	100.0%	0.0%	--	0.0%	40.0%	50.4%
Madison	46.2%	72.0%	7.1%	0.0%	57.1%	56.3%	50.7%
Marion	50.6%	57.1%	0.0%	100.0%	100.0%	100.0%	53.7%
Marshall	60.8%	66.7%	50.0%	0.0%	100.0%	60.0%	60.5%
Maury	47.1%	76.4%	27.3%	14.3%	66.7%	46.0%	48.2%
McMinn	55.9%	90.9%	0.0%	33.3%	50.0%	63.6%	56.6%
McNairy	58.8%	88.9%	--	--	0.0%	66.7%	60.4%
Meigs	54.5%	--	--	--	0.0%	28.6%	50.8%
Monroe	57.8%	50.0%	--	50.0%	100.0%	43.8%	57.3%
Montgomery	79.9%	92.5%	67.3%	91.8%	86.9%	82.5%	81.7%
Moore	52.0%	--	--	100.0%	0.0%	0.0%	50.9%
Morgan	52.3%	--	--	--	--	100.0%	53.3%
NA	14.3%	0.0%	0.0%	--	--	50.0%	7.3%
Obion	60.3%	85.7%	100.0%	--	--	50.0%	61.3%
Overton	52.3%	--	--	0.0%	50.0%	--	51.6%
Perry	57.1%	--	--	--	--	0.0%	47.1%
Pickett	71.4%	--	--	--	--	--	71.4%
Polk	59.6%	--	--	--	100.0%	66.7%	60.4%
Putnam	46.2%	100.0%	0.0%	0.0%	56.3%	52.9%	46.1%
Rhea	60.1%	100.0%	--	100.0%	50.0%	50.0%	60.3%
Roane	54.8%	66.7%	50.0%	0.0%	62.5%	50.0%	54.5%
Robertson	56.7%	80.0%	80.0%	33.3%	82.4%	59.6%	58.0%
Rutherford	50.4%	78.4%	37.1%	31.6%	63.8%	51.9%	52.8%
Scott	37.0%	0.0%	--	50.0%	--	63.6%	39.1%
Sequatchie	49.5%	100.0%	0.0%	--	100.0%	33.3%	49.2%
Sevier	51.7%	75.0%	11.1%	20.0%	66.7%	57.1%	51.5%

Ratio Of Non-Conventional Loan Borrowers In Total Borrowers, by Race, 2016

COUNTY	Asian	Black	White	Other Minority	Multi-Racial	Missing	ALL
Shelby	34.5%	77.5%	14.3%	58.8%	47.5%	45.2%	44.7%
Smith	50.6%	--	0.0%	0.0%	100.0%	57.1%	50.5%
Stewart	69.6%	100.0%	--	--	100.0%	100.0%	71.8%
Sullivan	31.8%	76.5%	10.0%	12.5%	50.0%	35.3%	32.3%
Sumner	46.4%	69.8%	12.5%	25.0%	64.3%	46.8%	47.3%
Tipton	69.9%	74.4%	66.7%	--	57.1%	75.0%	70.0%
Trousdale	55.3%	100.0%	--	--	100.0%	66.7%	59.8%
Unicoi	47.3%	--	--	0.0%	--	100.0%	48.2%
Union	52.6%	0.0%	0.0%	--	--	80.0%	53.7%
Van Buren	37.1%	--	--	--	--	--	37.1%
Warren	63.9%	100.0%	50.0%	0.0%	100.0%	42.9%	63.6%
Washington	31.2%	47.6%	15.4%	50.0%	18.8%	33.3%	31.3%
Wayne	51.2%	--	--	0.0%	0.0%	100.0%	41.8%
Weakley	54.2%	100.0%	--	--	80.0%	66.7%	56.6%
White	58.5%	75.0%	--	50.0%	100.0%	14.3%	57.8%
Williamson	18.5%	41.1%	5.2%	5.9%	31.6%	16.4%	18.3%
Wilson	40.9%	64.8%	12.2%	40.0%	54.8%	37.1%	41.2%
TENNESSEE	43.7%	75.0%	19.1%	34.4%	54.8%	40.8%	45.3%

APPENDIX G

Home Purchase Loans Denial Rates* by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Anderson	9.5%	8.3%	33.3%	0.0%	20.0%	24.3%	10.3%
Bedford	11.7%	19.2%	0.0%	0.0%	0.0%	19.4%	12.0%
Benton	23.9%	--	--	--	0.0%	50.0%	24.7%
Bledsoe	25.9%	0.0%	--	--	0.0%	50.0%	27.0%
Blount	8.5%	10.5%	13.3%	0.0%	21.1%	16.2%	9.1%
Bradley	8.6%	13.5%	0.0%	33.3%	30.8%	22.1%	9.8%
Campbell	23.2%	0.0%	50.0%	0.0%	--	5.0%	22.3%
Cannon	12.8%	--	100.0%	--	66.7%	20.0%	14.8%
Carroll	16.1%	25.0%	0.0%	--	33.3%	0.0%	16.2%
Carter	12.7%	0.0%	0.0%	0.0%	--	15.0%	12.6%
Cheatham	8.8%	28.6%	0.0%	0.0%	20.0%	22.5%	9.8%
Chester	12.4%	33.3%	0.0%	0.0%	0.0%	37.5%	14.1%
Claiborne	20.7%	50.0%	0.0%	0.0%	0.0%	14.3%	20.8%
Clay	8.1%	--	--	0.0%	--	0.0%	7.3%
Cocke	15.0%	0.0%	0.0%	0.0%	0.0%	37.5%	15.5%
Coffee	10.0%	20.0%	16.7%	--	20.0%	16.7%	10.9%
Crockett	20.6%	33.3%	--	0.0%	--	0.0%	20.6%
Cumberland	14.1%	--	0.0%	0.0%	14.3%	25.0%	14.5%
Davidson	7.5%	17.3%	11.5%	28.0%	12.6%	9.7%	9.0%
Decatur	15.2%	0.0%	0.0%	--	--	--	14.7%
DeKalb	14.3%	0.0%	--	0.0%	0.0%	33.3%	14.6%
Dickson	10.4%	28.6%	33.3%	0.0%	0.0%	10.5%	10.5%
Dyer	13.1%	38.9%	0.0%	0.0%	20.0%	35.7%	15.2%
Fayette	5.4%	16.2%	25.0%	50.0%	10.0%	15.4%	7.9%
Fentress	22.0%	--	--	0.0%	0.0%	50.0%	23.4%
Franklin	12.3%	0.0%	0.0%	0.0%	40.0%	25.0%	12.8%
Gibson	10.9%	21.2%	40.0%	--	33.3%	5.3%	11.8%
Giles	13.3%	25.0%	--	0.0%	--	12.5%	13.7%
Grainger	18.2%	0.0%	--	0.0%	--	25.0%	18.3%
Greene	12.1%	33.3%	0.0%	0.0%	40.0%	28.6%	12.8%
Grundy	19.4%	--	--	50.0%	--	0.0%	19.6%
Hamblen	8.1%	23.1%	33.3%	0.0%	0.0%	17.2%	8.9%
Hamilton	8.3%	20.3%	11.5%	14.3%	12.2%	14.0%	9.6%
Hancock	37.9%	100.0%	--	0.0%	--	66.7%	40.0%
Hardeman	13.1%	20.6%	0.0%	--	--	33.3%	15.3%
Hardin	15.4%	50.0%	--	0.0%	0.0%	8.3%	15.2%
Hawkins	15.6%	50.0%	0.0%	11.1%	50.0%	38.1%	16.8%
Haywood	7.1%	5.3%	--	50.0%	0.0%	0.0%	7.1%
Henderson	13.1%	0.0%	--	100.0%	66.7%	33.3%	14.2%
Henry	13.7%	12.5%	--	0.0%	0.0%	23.1%	13.9%
Hickman	18.7%	--	--	0.0%	100.0%	20.0%	18.9%
Houston	19.0%	--	--	0.0%	100.0%	40.0%	20.9%
Humphreys	11.8%	20.0%	--	0.0%	0.0%	0.0%	11.2%

Home Purchase Loans Denial Rates* by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Jackson	22.2%	--	--	50.0%	--	0.0%	22.1%
Jefferson	14.4%	25.0%	0.0%	0.0%	0.0%	28.0%	14.9%
Johnson	18.4%	--	100.0%	0.0%	0.0%	40.0%	20.2%
Knox	8.1%	19.1%	18.6%	19.2%	7.8%	19.9%	9.2%
Lake	16.7%	0.0%	--	--	--	66.7%	20.8%
Lauderdale	23.7%	24.1%	0.0%	--	0.0%	75.0%	24.8%
Lawrence	13.9%	25.0%	--	0.0%	25.0%	21.1%	14.4%
Lewis	20.5%	--	0.0%	0.0%	0.0%	0.0%	19.0%
Lincoln	10.5%	0.0%	0.0%	33.3%	50.0%	15.0%	10.9%
Loudon	8.3%	0.0%	0.0%	0.0%	9.1%	11.6%	8.4%
Macon	12.0%	50.0%	0.0%	--	0.0%	33.3%	13.4%
Madison	6.8%	19.0%	6.7%	0.0%	16.7%	30.4%	10.5%
Marion	17.2%	12.5%	0.0%	0.0%	28.6%	42.9%	18.7%
Marshall	10.1%	50.0%	20.0%	0.0%	20.0%	8.7%	11.2%
Maury	8.7%	18.3%	21.4%	0.0%	20.0%	13.0%	9.7%
McMinn	12.3%	8.3%	0.0%	0.0%	33.3%	17.9%	12.4%
McNairy	12.4%	0.0%	--	50.0%	50.0%	50.0%	14.8%
Meigs	23.7%	--	--	--	0.0%	0.0%	21.2%
Monroe	15.9%	0.0%	--	0.0%	33.3%	22.7%	16.2%
Montgomery	8.3%	14.1%	12.5%	1.9%	9.3%	13.7%	9.3%
Moore	10.5%	--	--	50.0%	0.0%	0.0%	11.5%
Morgan	23.1%	--	--	100.0%	--	60.0%	25.2%
NA	45.2%	50.0%	4.0%	100.0%	--	84.6%	39.8%
Obion	15.4%	33.3%	0.0%	--	0.0%	0.0%	16.0%
Overton	21.8%	--	--	0.0%	0.0%	--	21.3%
Perry	28.6%	100.0%	--	--	--	0.0%	28.0%
Pickett	10.0%	--	--	--	--	--	10.0%
Polk	27.5%	--	--	100.0%	0.0%	14.3%	27.1%
Putnam	12.4%	0.0%	8.3%	0.0%	5.9%	19.0%	12.2%
Rhea	14.1%	33.3%	100.0%	0.0%	0.0%	50.0%	15.5%
Roane	10.1%	18.2%	33.3%	20.0%	0.0%	34.5%	11.6%
Robertson	8.9%	25.0%	16.7%	25.0%	19.0%	12.3%	9.9%
Rutherford	7.4%	13.7%	8.2%	20.8%	4.2%	14.9%	8.4%
Scott	19.9%	0.0%	--	0.0%	--	26.7%	20.1%
Sequatchie	18.3%	0.0%	0.0%	--	0.0%	18.2%	17.8%
Sevier	15.8%	0.0%	25.0%	0.0%	33.3%	30.4%	16.5%
Shelby	6.5%	19.1%	10.5%	33.3%	10.1%	21.0%	10.9%
Smith	12.4%	--	0.0%	0.0%	0.0%	38.5%	13.7%
Stewart	24.5%	0.0%	--	--	50.0%	0.0%	23.9%
Sullivan	11.9%	22.7%	21.4%	11.1%	5.3%	23.5%	12.5%
Sumner	7.9%	13.3%	18.6%	33.3%	10.6%	10.3%	8.5%
Tipton	11.0%	12.0%	0.0%	--	5.9%	37.5%	11.9%
Trousdale	10.1%	0.0%	--	--	20.0%	0.0%	9.9%
Unicoi	13.0%	--	--	0.0%	--	44.4%	14.5%
Union	12.3%	0.0%	0.0%	--	--	15.4%	12.4%
Van Buren	14.6%	--	--	100.0%	--	100.0%	18.6%

Home Purchase Loans Denial Rates* by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Warren	10.4%	12.5%	0.0%	50.0%	0.0%	46.2%	12.7%
Washington	9.6%	12.5%	27.8%	20.0%	10.5%	20.0%	10.3%
Wayne	6.0%	--	--	0.0%	0.0%	50.0%	7.7%
Weakley	14.7%	0.0%	--	100.0%	28.6%	0.0%	14.9%
White	16.6%	0.0%	--	0.0%	0.0%	30.0%	16.5%
Williamson	6.6%	9.3%	7.4%	5.3%	7.1%	10.6%	7.0%
Wilson	8.7%	10.1%	10.0%	21.1%	20.5%	10.4%	9.1%
Total	9.4%	17.3%	11.5%	14.4%	11.7%	15.9%	10.5%

**First-lien, Owner-Occupied, 1-4 Family Home Purchase Loans*

APPENDIX H

Refinance Loans Denial Rates, by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Anderson	34.2%	45.8%	100.0%	100.0%	54.5%	38.8%	35.3%
Bedford	33.1%	51.7%	66.7%	0.0%	66.7%	50.6%	36.7%
Benton	43.3%	50.0%	100.0%	0.0%	100.0%	54.5%	45.9%
Bledsoe	38.1%	0.0%	0.0%	0.0%	0.0%	66.7%	39.9%
Blount	29.5%	46.5%	50.0%	50.0%	43.2%	39.2%	31.3%
Bradley	33.7%	52.3%	60.0%	50.0%	18.8%	55.2%	36.3%
Campbell	38.0%	0.0%	50.0%	0.0%	0.0%	49.2%	39.3%
Cannon	32.4%	0.0%	0.0%	100.0%	0.0%	50.0%	34.0%
Carroll	30.9%	37.5%	0.0%	0.0%	75.0%	37.5%	32.1%
Carter	41.5%	57.1%	0.0%	50.0%	66.7%	34.0%	41.4%
Cheatham	29.9%	40.0%	0.0%	50.0%	50.0%	40.3%	31.3%
Chester	28.7%	22.2%	0.0%	100.0%	50.0%	42.9%	30.4%
Claiborne	39.9%	100.0%	50.0%	0.0%	0.0%	64.3%	43.3%
Clay	53.5%	0.0%	0.0%	0.0%	0.0%	66.7%	51.0%
Cocke	47.1%	80.0%	0.0%	50.0%	25.0%	51.4%	47.8%
Coffee	33.3%	66.7%	0.0%	50.0%	28.6%	50.0%	35.9%
Crockett	35.6%	60.0%	0.0%	50.0%	0.0%	44.4%	38.1%
Cumberland	31.9%	50.0%	100.0%	66.7%	36.4%	40.6%	33.3%
Davidson	26.1%	43.8%	46.0%	64.6%	41.8%	32.3%	31.1%
Decatur	27.5%	100.0%	0.0%	0.0%	100.0%	52.9%	32.3%
DeKalb	45.4%	33.3%	0.0%	0.0%	0.0%	42.9%	44.9%
Dickson	33.2%	47.6%	0.0%	66.7%	41.7%	32.1%	33.7%
Dyer	35.0%	53.1%	0.0%	0.0%	0.0%	35.1%	36.3%
Fayette	27.1%	49.6%	0.0%	0.0%	22.2%	47.3%	33.2%
Fentress	44.9%	0.0%	0.0%	50.0%	0.0%	56.5%	46.3%
Franklin	32.4%	53.3%	100.0%	0.0%	37.5%	39.7%	33.9%
Gibson	38.6%	61.7%	66.7%	50.0%	42.9%	52.4%	42.8%
Giles	36.4%	70.0%	50.0%	33.3%	0.0%	45.7%	38.2%
Grainger	33.2%	0.0%	0.0%	100.0%	100.0%	31.3%	33.6%
Greene	39.8%	42.9%	100.0%	16.7%	73.3%	55.0%	42.0%
Grundy	26.6%	0.0%	100.0%	66.7%	100.0%	41.7%	31.3%
Hamblen	36.7%	46.2%	33.3%	16.7%	33.3%	48.9%	38.1%
Hamilton	30.2%	45.5%	34.7%	39.3%	31.1%	42.6%	33.5%
Hancock	48.6%	0.0%	0.0%	0.0%	0.0%	0.0%	48.6%
Hardeman	35.9%	61.0%	0.0%	100.0%	0.0%	66.7%	46.8%
Hardin	39.0%	33.3%	0.0%	66.7%	50.0%	42.9%	40.2%
Hawkins	40.9%	40.0%	0.0%	60.0%	72.7%	53.1%	42.6%
Haywood	35.2%	45.5%	0.0%	0.0%	0.0%	47.8%	40.2%

Refinance Loans Denial Rates, by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Henderson	30.0%	56.3%	0.0%	0.0%	100.0%	43.5%	33.0%
Henry	33.1%	80.0%	50.0%	100.0%	57.1%	48.0%	36.8%
Hickman	43.3%	50.0%	0.0%	0.0%	0.0%	25.0%	41.1%
Houston	42.9%	100.0%	0.0%	50.0%	50.0%	10.0%	40.4%
Humphreys	36.4%	50.0%	0.0%	0.0%	0.0%	45.5%	37.2%
Jackson	46.8%	100.0%	100.0%	0.0%	0.0%	41.7%	45.5%
Jefferson	36.1%	55.6%	50.0%	33.3%	33.3%	42.4%	37.2%
Johnson	35.4%	0.0%	0.0%	0.0%	0.0%	33.3%	35.0%
Knox	27.6%	48.2%	33.3%	52.9%	33.3%	37.0%	30.0%
Lake	43.2%	33.3%	0.0%	0.0%	0.0%	100.0%	47.7%
Lauderdale	41.9%	54.4%	0.0%	0.0%	50.0%	37.0%	44.4%
Lawrence	36.9%	100.0%	0.0%	0.0%	33.3%	42.5%	37.4%
Lewis	36.6%	0.0%	0.0%	0.0%	50.0%	38.5%	37.4%
Lincoln	34.5%	58.3%	100.0%	40.0%	27.3%	46.3%	36.8%
Loudon	29.1%	46.2%	33.3%	0.0%	25.0%	36.8%	30.0%
Macon	33.3%	0.0%	0.0%	0.0%	50.0%	52.2%	35.1%
Madison	29.6%	52.4%	41.7%	57.1%	17.6%	47.2%	37.4%
Marion	32.2%	40.0%	0.0%	0.0%	66.7%	59.5%	35.8%
Marshall	29.9%	56.3%	0.0%	33.3%	71.4%	37.8%	32.4%
Maury	28.8%	44.4%	50.0%	75.0%	26.3%	38.4%	31.3%
McMinn	38.0%	36.4%	0.0%	42.9%	50.0%	50.8%	39.0%
McNairy	33.5%	36.4%	0.0%	66.7%	66.7%	44.8%	35.4%
Meigs	43.3%	0.0%	0.0%	100.0%	0.0%	58.3%	44.9%
Monroe	35.8%	33.3%	50.0%	75.0%	25.0%	51.1%	37.4%
Montgomery	31.8%	36.3%	29.7%	48.1%	29.4%	35.5%	33.2%
Moore	37.9%	0.0%	0.0%	0.0%	0.0%	45.5%	37.0%
Morgan	31.6%	0.0%	0.0%	0.0%	100.0%	47.1%	33.2%
NA	28.6%	22.2%	0.0%	0.0%	0.0%	100.0%	23.1%
Obion	36.7%	56.3%	0.0%	0.0%	33.3%	72.5%	42.7%
Overton	42.4%	100.0%	0.0%	100.0%	0.0%	50.0%	43.8%
Perry	42.6%	50.0%	0.0%	100.0%	0.0%	60.0%	45.5%
Pickett	41.7%	0.0%	0.0%	0.0%	50.0%	75.0%	45.2%
Polk	38.3%	100.0%	0.0%	100.0%	50.0%	58.3%	42.2%
Putnam	38.4%	25.0%	18.2%	66.7%	33.3%	42.7%	38.6%
Rhea	39.3%	0.0%	50.0%	50.0%	33.3%	39.3%	39.3%
Roane	32.4%	34.8%	33.3%	0.0%	57.1%	46.3%	33.8%
Robertson	32.3%	50.0%	16.7%	0.0%	28.0%	29.0%	32.4%
Rutherford	27.9%	38.7%	36.8%	54.2%	41.0%	34.6%	30.2%
Scott	45.2%	100.0%	0.0%	0.0%	0.0%	63.3%	48.5%
Sequatchie	28.8%	0.0%	0.0%	50.0%	100.0%	36.1%	30.2%

Refinance Loans Denial Rates, by Race, 2016

County	White	Black	Asian	Other	Multi-Racial	Missing	TOTAL
Sevier	39.7%	50.0%	50.0%	60.0%	33.3%	49.2%	41.0%
Shelby	29.2%	53.7%	33.0%	38.9%	42.7%	48.0%	40.2%
Smith	34.2%	50.0%	0.0%	0.0%	33.3%	62.5%	37.4%
Stewart	40.0%	0.0%	0.0%	0.0%	50.0%	48.0%	40.9%
Sullivan	37.6%	43.8%	66.7%	66.7%	55.2%	37.7%	38.1%
Sumner	27.4%	34.1%	34.1%	57.1%	44.9%	36.3%	29.2%
Tipton	30.2%	54.2%	60.0%	50.0%	45.5%	50.0%	35.7%
Trousdale	26.4%	0.0%	0.0%	0.0%	100.0%	50.0%	28.2%
Unicoi	30.3%	0.0%	0.0%	0.0%	50.0%	45.5%	32.5%
Union	41.8%	100.0%	0.0%	0.0%	50.0%	53.6%	43.8%
Van Buren	47.1%	0.0%	0.0%	0.0%	0.0%	0.0%	46.4%
Warren	40.3%	37.5%	0.0%	50.0%	83.3%	41.9%	41.1%
Washington	33.5%	35.7%	22.2%	57.1%	21.7%	39.2%	34.0%
Wayne	27.9%	100.0%	0.0%	50.0%	100.0%	33.3%	31.0%
Weakley	37.6%	50.0%	0.0%	0.0%	50.0%	41.7%	38.4%
White	44.8%	0.0%	0.0%	0.0%	0.0%	34.6%	43.0%
Williamson	19.8%	39.7%	23.0%	42.9%	29.9%	24.2%	21.3%
Wilson	27.1%	37.5%	22.8%	16.7%	27.9%	27.7%	27.5%
Total	30.6%	47.6%	35.4%	47.0%	39.3%	39.3%	33.6%

APPENDIX I

Methodology for Estimating Purchase Price Using Loan Amount

In the HMDA data, institutions report the loan amounts rather than the purchase prices. This complicates determining the mortgage borrowers who could be eligible for THDA loans. Therefore, in this version, the purchase price of the homes was estimated by assuming that borrowers paid four percent of the reported loan amount as downpayment. A four percent downpayment may be considered low, especially for conventional loans, but considering there are zero or low downpayment loan products such as FSA/RHS and FHA insured loans and borrowers may use private mortgage insurance (PMI) and pay less than 20 percent downpayment, four percent is a good average for an estimated downpayment. To determine the eligibility based on the income limits, THDA's income limits for a large family (households with three or more people) were used.

APPENDIX J

	ALL FHA-Insured Loans		FHA-Insured THDA Funded Loans		THDA FHA Market Share	
	2016	2015	2016	2015	2016	2015
Anderson	166	129	29	27	17.5%	20.9%
Bedford	101	69	5	12	5.0%	17.4%
Benton	11	6	0	0	0.0%	0.0%
Bledsoe	9	7	0	2	0.0%	28.6%
Blount	213	204	23	28	10.8%	13.7%
Bradley	283	250	53	61	18.7%	24.4%
Campbell	58	38	5	2	8.6%	5.3%
Cannon	22	31	1	2	4.5%	6.5%
Carroll	15	21	1	2	6.7%	9.5%
Carter	47	35	0	1	0.0%	2.9%
Cheatham	136	128	15	15	11.0%	11.7%
Chester	30	21	1	2	3.3%	9.5%
Claiborne	23	15	1	1	4.3%	6.7%
Clay	2	8	0	0	0.0%	0.0%
Cocke	24	23	3	4	12.5%	17.4%
Coffee	94	54	6	4	6.4%	7.4%
Crockett	20	22	5	3	25.0%	13.6%
Cumberland	54	32	3	7	5.6%	21.9%
Davidson	2,227	2,401	297	459	13.3%	19.1%
Decatur	14	5	0	0	0.0%	0.0%
DeKalb	37	27	5	3	13.5%	11.1%
Dickson	166	126	15	10	9.0%	7.9%
Dyer	38	41	5	6	13.2%	14.6%
Fayette	129	93	8	5	6.2%	5.4%
Fentress	13	9	0	1	0.0%	11.1%
Franklin	67	50	4	5	6.0%	10.0%
Gibson	89	65	10	8	11.2%	12.3%
Giles	43	43	1	2	2.3%	4.7%
Grainger	20	17	5	7	25.0%	41.2%
Greene	57	57	16	10	28.1%	17.5%
Grundy	8	9	1	1	12.5%	11.1%
Hamblen	91	74	11	22	12.1%	29.7%
Hamilton	931	874	170	129	18.3%	14.8%
Hancock	2	3	0	0	0.0%	0.0%
Hardeman	42	10	1	0	2.4%	0.0%
Hardin	24	24	2	0	8.3%	0.0%

	ALL FHA-Insured Loans		FHA-Insured THDA Funded Loans		THDA FHA Market Share	
	2016	2015	2016	2015	2016	2015
Hawkins	68	67	9	6	13.2%	9.0%
Haywood	43	29	9	6	20.9%	20.7%
Henderson	31	34	1	0	3.2%	0.0%
Henry	30	27	3	0	10.0%	0.0%
Hickman	41	47	7	5	17.1%	10.6%
Houston	15	4	2	1	13.3%	25.0%
Humphreys	21	19	0	1	0.0%	5.3%
Jackson	9	6	0	0	0.0%	0.0%
Jefferson	91	91	15	21	16.5%	23.1%
Johnson	9	3	0	0	0.0%	0.0%
Knox	1,290	1,104	236	172	18.3%	15.6%
Lake	6	0	0	0	0.0%	NA
Lauderdale	29	35	9	9	31.0%	25.7%
Lawrence	65	47	3	2	4.6%	4.3%
Lewis	11	6	1	0	9.1%	0.0%
Lincoln	61	43	2	2	3.3%	4.7%
Loudon	105	77	18	15	17.1%	19.5%
Macon	44	22	4	3	9.1%	13.6%
Madison	282	207	69	56	24.5%	27.1%
Marion	40	31	0	1	0.0%	3.2%
Marshall	76	65	3	2	3.9%	3.1%
Maury	435	352	49	49	11.3%	13.9%
McMinn	72	61	12	7	16.7%	11.5%
McNairy	36	36	0	3	0.0%	8.3%
Meigs	11	15	1	1	9.1%	6.7%
Monroe	65	55	9	9	13.8%	16.4%
Montgomery	516	429	86	86	16.7%	20.0%
Moore	5	7	0	0	0.0%	0.0%
Morgan	9	17	1	3	11.1%	17.6%
Obion	29	24	6	4	20.7%	16.7%
Overton	10	20	3	2	30.0%	10.0%
Perry	2	2	0	0	0.0%	0.0%
Pickett	1	0	0	0	0.0%	NA
Polk	27	13	2	3	7.4%	23.1%
Putnam	92	95	2	8	2.2%	8.4%
Rhea	57	35	6	5	10.5%	14.3%
Roane	74	65	14	12	18.9%	18.5%
Robertson	261	233	17	30	6.5%	12.9%
Rutherford	1,938	1,747	235	319	12.1%	18.3%

	ALL FHA-Insured Loans		FHA-Insured THDA Funded Loans		THDA FHA Market Share	
	2016	2015	2016	2015	2016	2015
Scott	20	2	1	1	5.0%	50.0%
Sequatchie	19	21	3	0	15.8%	0.0%
Sevier	139	131	9	18	6.5%	13.7%
Shelby	1,808	1,792	160	235	8.8%	13.1%
Smith	26	33	0	3	0.0%	9.1%
Stewart	11	11	1	2	9.1%	18.2%
Sullivan	254	212	13	26	5.1%	12.3%
Sumner	771	727	88	92	11.4%	12.7%
Tipton	107	92	4	7	3.7%	7.6%
Trousdale	24	14	1	2	4.2%	14.3%
Unicoi	13	12	3	0	23.1%	0.0%
Union	39	25	8	1	20.5%	4.0%
Van Buren	4	5	0	0	0.0%	0.0%
Warren	42	28	4	6	9.5%	21.4%
Washington	131	142	13	19	9.9%	13.4%
Wayne	7	4	0	0	0.0%	0.0%
Weakley	23	24	1	1	4.3%	4.2%
White	34	31	1	4	2.9%	12.9%
Williamson	331	350	25	29	7.6%	8.3%
Wilson	413	393	23	29	5.6%	7.4%
TENNESSEE	15,529	14,240	1,894	2,159	12.2%	15.2%