AN ANALYSIS OF MORTGAGE REFINANCING, 2001-2003

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I. Introduction

Homeowners in the United States have had several opportunities to refinance in the past decade as interest rates have fluctuated but have been relatively low compared to earlier decades. A further decline in interest rates since the middle of 2001 has given homeowners additional refinancing opportunities. This paper examines this recent refinancing wave and its impact on refinancing households' consumption and debt burden. The paper also provides statistics on the demographics of households that have refinanced their mortgages in recent years.

Main Findings. Some of the key findings of this paper include:

- Between January 2001 and June 2003, mortgage interest rates dropped by more than 20 percent. Mortgage interest rates dropped from 7.01 percent in the first quarter of 2001 to 5.52 percent in the second quarter of 2003. Mortgage interest rates increased to around 5.92 percent during the fourth quarter of 2003 but dropped to 5.60 percent during the first quarter of 2004. These drops in the mortgage interest rate provided households with a sustained opportunity to refinance to lower monthly payments or take equity out of their homes for consumption and investment.

- The total number of refinance loans increased from approximately 2.5 million in 2000 to more than 15 million in 2003.

- The total pre-tax payment savings available to households that refinanced their loans between January 2001 and December 2003 grew to an estimated $3.6 billion to $4.0 billion per month by year-end 2003, for a potential cumulative mortgage payment savings of $54 billion to $61 billion through March 2004.

- Household wealth, in the form of home equity, has increased substantially because of house price appreciation. Many households have used their mortgage payment savings to borrow against this increased home equity. For example, households converted an estimated $139 billion of home equity into cash in 2003 alone.

- Households have used the cashed-out equity to make improvements to their homes. Approximately 35 percent of cashed-out equity has been used for home improvement. Refinancing in 2003 alone helped fund approximately $100 billion in home improvements. These improvements should contribute further to the growth in home values.

- Households have also used the cashed-out equity to improve their financial position. Households have used 47 percent of their cashed-out equity to pay off high-cost consumer debt and make investments. The result is that households are in a better position to spend and save in the future.

- Households at all income levels have taken advantage of opportunities to refinance their mortgages. The most recent Home Mortgage Disclosure Act (HMDA) data indicate that refinancing by low-income households increased by more than 200 percent in 2002 from its 2000 level. Similarly, refinance loans for moderate- and upper-income households increased by approximately 300 and 400 percent, respectively, from their 2000 levels.

- Minorities have also taken advantage of recent drops in the interest rate. However, African-Americans and Hispanics continue to rely disproportionately on higher-cost subprime loans to refinance.

The rest of the paper is as follows. Section II provides statistics on the recent refinancing wave and compares it to previous periods of heavy refinancing in the 1990s. Section III characterizes households' motivations for refinancing and estimates the impact of refinancing on household savings and consumption. Section IV provides descriptive statistics on the demographics of households that have refinanced during the latest refinance wave.

II. Refinance Activity and Mortgage Rates, 1990-2003

The total refinance volume increased dramatically beginning in 2001 and continued through 2002 and into 2003. Households refinanced $1.2 trillion of mortgage debt in 2001 and $1.7 trillion in 2002. The Mortgage Bankers Association (MBA) estimates that 2003 was another record high year for refinancing, with loan refinances totaling approximately $2.5 trillion.[1] The main reason for the increase in refinance activity was a 21 percent drop in interest rates from 7.01 percent in the first quarter of 2001 to 5.52 percent in the second quarter of 2003.[2] (See Figure 1.)

The main factor driving households' decision to refinance is the difference between the interest rate on their current mortgages and the interest rate they could obtain by refinancing. As illustrated in Figure 2, the refinance share of total mortgage originations increased most significantly from 1990 through 2003 whenever there was a large drop in interest rates. The refinance share of overall mortgage originations rose above 50 percent in 1993, 1998, and 2001 through the second quarter of 2003, when interest rates had decreased by more than 100 basis points.[3] (See Figure 2.)

III. The Impact of Refinancing

The drop in interest rates beginning in 2001 and an increase in housing prices have provided households with the opportunity to reduce monthly mortgage payments, increase consumption, and restructure their debt and asset portfolios. This section

quantifies the payment savings available to households during the recent refinancing wave and discusses how households have used those interest savings.

Many households have taken advantage of lower interest rates to reduce monthly mortgage payments. The reduction in monthly mortgage payments has made a corresponding amount of income available to fund additional consumption, savings, or debt. Many households have chosen to borrow more than the amount needed to pay off their old mortgage. These households "cashed out equity" and often used these funds to pay off higher cost debt (e.g., credit card debt, second mortgages, and home equity lines of credit), purchase goods and services, or increase their liquid assets.

A. Savings From Refinancing

Researchers at the Board of Governors of the Federal Reserve System report that during 2001 and the first part of 2002 households used refinancing to take advantage of lower interest rates or alter other terms of their mortgage. The Federal Reserve estimated that, holding the other terms of the loans unchanged, the lower interest rates obtained by refinancing households over this period would have saved $13.1 billion per year in annual mortgage payments.[4] Further drops in the interest rate since the middle of 2002 (the end of the Federal Reserve sample period) have contributed to additional refinancing and payment savings.

Freddie Mac reports data on the refinancing activity of conventional conforming loans in its portfolio. These data include statistics on overall refinancing, the proportion of loans taking cash out, the ratio of the old interest rate to the new interest rate, and the average age of the loans.[5] Based on these data, HUD has estimated the potential aggregate monthly payment savings from refinancing households' existing unpaid balance at the lower interest rate, all else equal. The estimate covers households that have refinanced since the beginning of 2001 through the end of 2003. Table 1 reports that the total aggregate pre-tax savings for all households that refinanced over this period grew to an estimated $3.6 billion per month.[6] This estimate of potential mortgage payment savings translates into a $54 billion cumulative mortgage payment savings through March 2004 for all households that refinanced between January 2001 and December 2003.[7] The cumulative mortgage payment savings in 2003 alone accounted for $30 billion of the $54 billion savings. As discussed in Section III.B below, the pre-tax savings estimates reported here are conservative estimates. That section considers some alternative assumptions that yield higher estimates of payment savings.

Table 2 reports estimates of refinancing volume and monthly payments by Census sub-region and by state. Households in California accounted for the highest share of refinancing each year beginning with 2001. In 2003, for example, California accounted for $624 billion of the $2.5 trillion in national refinancing. Table 2 also reports that the total aggregate payment savings for all California households that refinanced in 2001 through 2003 was an estimated $0.89 billion per month.[8]

B. Alternative Assumptions and Savings Estimates

The estimates of monthly payment savings reported above in Section III.A were based on certain assumptions that suggest the reported savings may be somewhat conservative. First, the assumption regarding cash payments of closing costs (2 percent) may be too high, given that many consumers financed their closing costs by taking out a higher rate mortgage.[9] Unfortunately, information is not available on the extent to which refinancing homeowners pay closing costs by cash or by taking out a higher interest rate loan. If cash-paid closing costs amounted to just one percent (half of the original assumption), then the total aggregate savings per month for all households that refinanced from 2001 through 2003 would increase from $3.6 billion to $3.9 billion per month; cumulative mortgage payment savings through March 2004 would increase from $54 billion to $59 billion.

Also, the financial benefits reported in Section III.A are restricted to the savings associated with the old unpaid balance that existed prior to refinancing. Thus, the payment estimates in Section III.A do not include any financial benefit to the refinancing homeowner from taking cash out or from increasing their new refinanced loan to pay off existing second mortgages, home equity lines of credit, or consumer debt (such as credit cards).[10] This benefit is not included in the payment savings reported in Section III.A. If only one-fourth of cash-outs and payoffs of existing debt resulted in an average interest rate reduction comparable to the change in payments savings, then the total aggregate savings per month for all households that refinanced since the start of 2001 would increase from $3.6 billion to $3.7 billion per month; cumulative mortgage payment savings through March 2004 would increase from $54 billion to $56 billion.

While there is some uncertainty around these alternative assumptions (closing costs and cash outs/mortgage consolidations), it is still useful to show their cumulative effects on the payment savings. If the cash-paid closing cost assumption is reduced to one percent and consumers receive interest-reduction benefits on one-fourth of the volume of cash outs and second mortgage consolidations, then total aggregate savings per month would increase from $3.6 billion to $4.0 billion per month; cumulative mortgage payment savings through March 2004 would increase from $54 billion to $61 billion.[11]

C. Cash-Out Refinances

Many households refinance their mortgages to reduce their monthly mortgage payments and make additional monthly income available for increased consumption or savings. Other households have chosen to borrow more than they need to pay off their old mortgage and cash out home equity. The Federal Reserve researchers report that approximately 45 percent of households that refinanced also took equity out of their home. By comparison, they report that only 35 percent of households that refinanced took equity out of their homes during the refinancing wave in 1998 and early 1999. They cite more rapid house price appreciation and sharply rising consumer debt as reasons for the higher cash-out rate during the current refinancing wave.[12]

Freddie Mac economists estimate that households converted approximately $188 billion in home equity in 2001 and 2002. (See Figure 3.) They estimate that in 2003 alone, households converted approximately $139 billion in home equity to cash.[13] However, they conclude that rising housing prices replaced most of the reduction in home equity that households cashed out in 2003.[14]

Households have used recent home equity withdrawals for a variety of purposes. The Federal Reserve researchers found that cash-out refinances were used for home improvement (35 percent), consumer and other debt repayment (26 percent), consumer expenditures (16 percent), and investment (21 percent).[15] Freddie Mac estimates that in 2003, cashed-out home equity helped fund more than $100 billion worth of home improvements.[16] Researchers at the New York Federal Reserve Bank concluded that households had used the cashed-out equity from the latest refinancing wave to reduce higher-cost consumer debt and make more investments while still maintaining their same rate of consumption. They concluded that the recent refinancing had improved households' balance sheets, leaving them in a better position to spend and save in the future.[17]

IV. Refinancing Statistics By Demographic Characteristics

As described in Section II, the drop in interest rates beginning in 2001 caused a surge in overall refinance activity that continued into 2003. HUD's analysis of HMDA data show that the total number of refinance loans increased from approximately 2.5 million in 2000 to nearly 8 million in 2001, 10 million in 2002, and 15 million in 2003.[18] (See Figure 4.) This section breaks out the increase in refinancing by type of mortgage product, household income, and racial or ethnic group.

Mortgage Product.[19] The absolute number of refinances increased dramatically from 2000 levels for each mortgage type.(See Table 3.) In summary:

- Conventional prime refinance lending increased from 1,747,676 loans in 2000 to 6,555,410 in 2001 and 8,790,210 in 2002. Conventional prime refinance loans were over 12.6 million in 2003.

- Conventional subprime refinance lending increased from 586,522 loans in 2000 to 732,424 loans in 2001 and 909,302 loans in 2002. Conventional subprime refinance loans were over 1.2 million in 2003.

- Government-insured refinance loans increased from 65,410 in 2000 to 556,982 in 2001 and decreased slightly in 2002 to 539,918. Government-insured refinance loans were approximately 922,000 in 2003.

The conventional prime and government-insured shares of overall refinances increased in response to the decline in the interest rate. The subprime share of overall refinance loans decreased from approximately 24 percent in 2000 to approximately 9 percent in 2001 through 2003. (See Table 3 and Figure 5.) The subprime share of

refinance lending declined because subprime refinancing is less responsive to interest rates than prime and government-insured lending.[20] Therefore, a decrease in interest rates will not lead to an increase in subprime refinancing that is proportional to the increase in prime or government-insured lending.

Household Income. Low-income households have historically refinanced at a slower rate than higher income households. However, since the recent drop in interest rates, households at all income levels have taken advantage of the lower interest rates to refinance their mortgages. Refinance loans for low-income households were 205% above their 2000 level, an increase from 717,690 loans in 2000 to 2,191,489 loans in 2002. Similarly, refinances for moderate-income and upper-income households in 2002 were 295% and 388% percent, respectively, above their 2000 levels.[21] (See Table 4.)

Household Racial or Ethnic Group. Refinance loans for African-Americans increased from 173,696 loans in 2000 to 322,714 loans in 2001 and 389,562 loans in 2002. Refinance loans for Hispanics increased from 132,238 loans in 2000 to 399,026 loans in 2001 and 502,489 loans in 2002. (See Table 5a.)

Table 5b and Figure 6 show that African-Americans and Hispanics rely disproportionately on FHA or subprime loans to refinance their mortgages. African-Americans accounted for 3.8 percent of all refinance loans in 2002 but 9.2 percent of all subprime refinance loans and 12.3 percent of all FHA-insured refinance loans. Hispanics accounted for 4.9 percent of all refinances in 2002 but 8.0 percent of all subprime refinances and 13.3 percent of all FHA-insured refinance loans.

Table 5b and Figure 7 show that African-Americans are more likely to refinance their mortgages during periods of higher interest rates than other racial or ethnic groups. African-Americans accounted for 7.1 percent of all refinance loans in 2000 when the average interest rate was 8.04 percent compared to 3.8 percent of all refinance loans in 2002 when the average interest rate was 6.43 percent.

[1] The Mortgage Bankers Association (MBA) is the source for the data on refinancing volume. See http://www.mbaa.org/marketdata/forecasts/ffMAR2004.pdf.

[2] Interest rates increased from a low of 5.26 percent during the month of June 2003 to 5.92 percent during the fourth quarter of 2003. In February 2004, interest rates dropped to 5.64 percent. See Freddie Mac Survey of Commitment Rate and Points, Monthly Average 30-Year Fixed Rate Mortgages Since 1971 posted at www.mbaa.org/marketdata/data/02/fm30yr_rates.htm. See also www.freddiemac.com/pmms. MBA also publishes interest rate survey data, which is available at http://www.mbaa.org/marketdata/data/01/mba30yr_rates.htm.

[3] MBA is the source of the refinance share of total loan volume. See www.mortgagebankers.org/marketdata/data/03/1-4_originations.html.

[4] Glenn Canner, Karen Dynan, and Wayne Passmore, "Mortgage Refinancing in 2001 and Early 2002," Federal Reserve Bulletin, December 2002.

[5] The Freddie Mac data are for conventional conforming loans. Thus, they exclude jumbo conventional loans (i.e., conventional loans over the conforming loan limit, which was $322,700 in 2003) and government loans (mainly loans insured by the Federal Housing Administration or guaranteed by the Veterans Administration). See http://www.freddiemac.com/news/finance/data.html.

[6] The estimate of mortgage payment savings is a pre-tax measure since mortgage interest is tax deductible. HUD estimates are based on MBA refinance volume data and data from Freddie Mac's Primary Mortgage Market Survey data and Cash-Out Refinancing Report. See www.freddiemac.com/pmms and www.freddiemac.com/news/finance/cashout_faq.html. HUD's estimate of potential mortgage payment savings is based on refinancing the household's existing unpaid principal balance (UPB) at the lower interest rate, everything else constant. HUD uses the Freddie Mac data for the share of cash-outs and consolidations to convert the MBA total refinance volume (which includes cash-out refinances, closing costs, and consolidation of home equity seconds and lines of credit) into an estimate of the unpaid principal balance that existed prior to the refinancing. HUD assumes that the new refinance loan amount is equal to the old (or pre-refinance) UPB plus closing costs equal to 2 percent of the UPB; this follows Canner, Dynan, and Passmore, op. cit. As discussed in the text, this closing cost adjustment may be high given that many households choose a higher interest rate and pay no costs at closing. Furthermore, as also discussed in the text, there may be additional payment savings from the use of cash-outs and from the refinancing of home equity seconds and lines of credit. Finally, HUD's estimate is based on the remaining maturity of the mortgage for the average household and does not adjust for the fact that many households obtain a further reduction in their monthly mortgage payments by extending the length of their mortgages. The estimate does not adjust for households that do not have a reduction in monthly mortgage payments because they convert their mortgages into shorter-term mortgages. For example, a significant number of households take advantage of lower interest rates to convert to 15-year mortgages. While these households may continue to pay the same monthly mortgage payment, they still realize a significant total interest cost savings over the lives of their new loans.

[7] The calculation of the $54 billion in cumulative monthly pre-tax savings assumes that homeowners who refinanced in any particular quarter between January 2001 and December 2003 receive payment savings through March 2004, with the payment savings starting in the quarter after they refinanced. HUD estimates are based on data from Freddie Mac's Primary Mortgage Market Survey data and Cash-Out Refinancing Report. See www.freddiemac.com/pmms and www.freddiemac.com/news/finance/cashout_faq.html.

[8] Source: HUD tabulation of Home Mortgage Disclosure Act (HMDA) data and MBA data for refinance volume. State breakouts are estimated using mortgage shares from HMDA data. Loans reported under HMDA are primarily for properties in metropolitan areas. See www.mortgagebankers.org/marketdata/data/03/1-4_originations.html for MBA data.

[9] In this case, the closing costs would be completely (in the case of the so-called "zero-closing-cost" loan) or partially financed through a "yield spread premium", which is the extra amount (i.e., price over par value) that lenders receive when selling loans with above-market interest rates. Essentially, the borrower accepts a higher interest rate and monthly payment in order to avoid paying the closing costs with higher upfront charges. In that case, HUD's payment calculations would reflect the closing costs through a higher monthly payment on the refinanced loan (due to the higher interest rate on the refinanced loan). If overall closing costs are three percent of the loan amount, HUD's two percent assumption implicitly assumes that one percent is paid through yield spread premiums. If refinance loans have lower closing costs than three percent, or if more than one percent is paid through yield spread premiums, then the two percent closing cost assumption for upfront and cash-paid closing costs in HUD's base model would be too high.

[10] In the case of a traditional home equity line of credit, the homeowner is paying only current market rates to begin with, so there is no monthly payment savings from replacing an old, higher rate loan with a new, lower current-market rate loan. This is the basic rationale for using the Freddie Mac data to exclude these payoffs of home equity loans from the monthly payment calculations. However, some home equity second mortgages that are paid off with the proceeds may have high interest rates, thus resulting in monthly payment savings to the refinancing homeowner.

[11] The savings reported in the text are pre-tax payment savings. Post-tax savings will be lower because those refinancing households that itemize will have less mortgage interest to deduct, which will increase their taxable income and their federal and state income taxes. The Federal Reserve researchers (Canner, Dynan, Passmore, op. cit.) provided one approach for estimating the net savings after accounting for federal and state taxes. They calculated a post-tax estimate of savings by multiplying (a) 83 percent (the ratio of home mortgage interest deducted to total mortgage interest paid by homeowners in 1999) times (b) 26 percent (the average marginal federal tax rate of taxpayers deducting their mortgage interest in 1999 was estimated to be 21 percent and the average marginal state tax rate was assumed to be 5 percent.) Given the recent decrease in tax rates, the estimated marginal federal tax rate may be slightly lower than the 1999 level of 21 percent. Still, the Federal Reserve researchers' approach can be used to provide a rough estimate of the impact of incorporating taxes into the analysis. Assuming that the $3.6-$4.0 billion in monthly payment savings consisted of interest savings (nearly true in the first few years of mortgage amortization), then the increase in homeowners' income taxes would be obtained by multiplying (a) 0.83 times (b) 0.26 times (c) $3.6-$4.0 billion, which yields $0.77-$0.86 billion. Deducting this from the $3.6-$4.0 billion in pre-tax savings yields $2.8-$3.1 billion in post-tax savings. Under these assumptions, the cumulative pre-tax savings of $54-$61 billion would be $42-$48 billion on an after-tax basis.

[12] See Canner, Dynan, and Passmore, op. cit.

[13] By comparison, households converted approximately $40 billion in home equity to cash during the 1998 refinance wave. See Freddie Mac's Cash-Out Refinancing Report, which is available at www.freddiemac.com/news/finance/data.html.

[14] "Share of Home Refinancings Taking Cash Out Grows As Overall Refi Levels Begin To Wane In Fourth Quarter 2003," Freddie Mac. February 4, 2004. See also www.mbaa.org/briefs/04/0204fm.html.

[15] See Canner, Dynan, and Passmore, op. cit.

[16] "Share of Home Refinancings Taking Cash Out Grows As Overall Refi Levels Begin To Wane In Fourth Quarter 2003," Freddie Mac. February 4, 2004. See also www.mbaa.org/briefs/04/0204fm.html.

[17] Margaret M. McConnell, Richard W. Peach, and Alex Al-Haschimi, "After the Refinancing Boom: Will Consumers Scale Back Their Spending?" Current Issues in Economics and Finance, December 2003.

[18] Source: HUD tabulations of Home Mortgage Disclosure Act (HMDA) data. HMDA data comprise the most comprehensive public database on mortgages in the United States. Policymakers and researchers

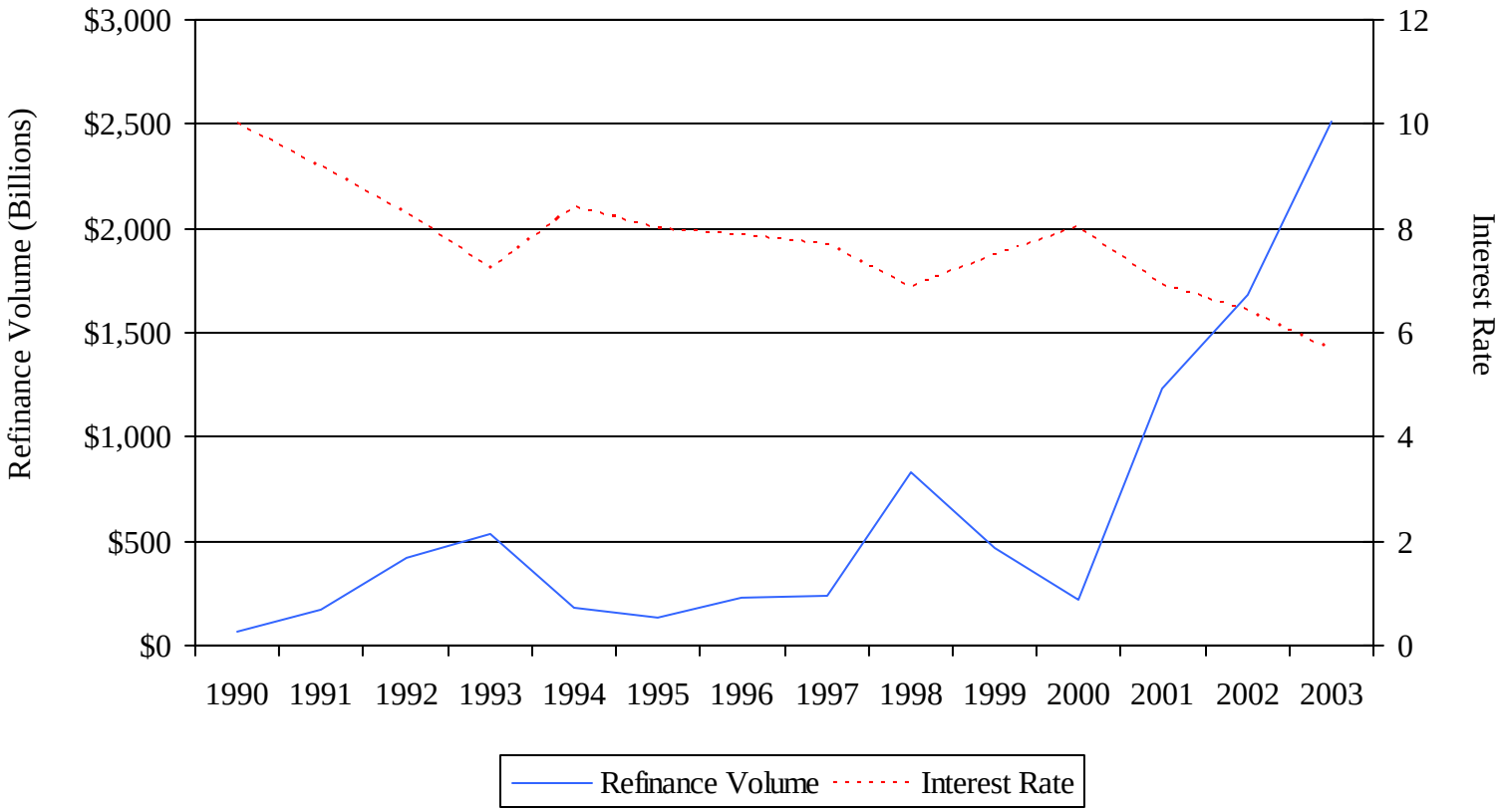
have used these data extensively to examine mortgage market trends and patterns of affordable lending at the national and local levels. HMDA data are not without their limitations. Although most lenders are required to report under HMDA (and these lenders account for the majority of mortgages originated in the United States), HMDA data are not a complete census of mortgage lenders and mortgage activity. For more information on HMDA data, see www.ffiec.gov. HMDA data do not have a field that identifies subprime and manufactured home loans. HUD annually compiles a list of subprime and manufactured home lender specialists that report HMDA data.

[19] The mortgage origination data reported in this section are derived from HUD tabulations of HMDA data.

[20] Government-insured lending includes FHA loans, Veterans Administration (VA) loans, and Rural Housing Service (RHS) loans.

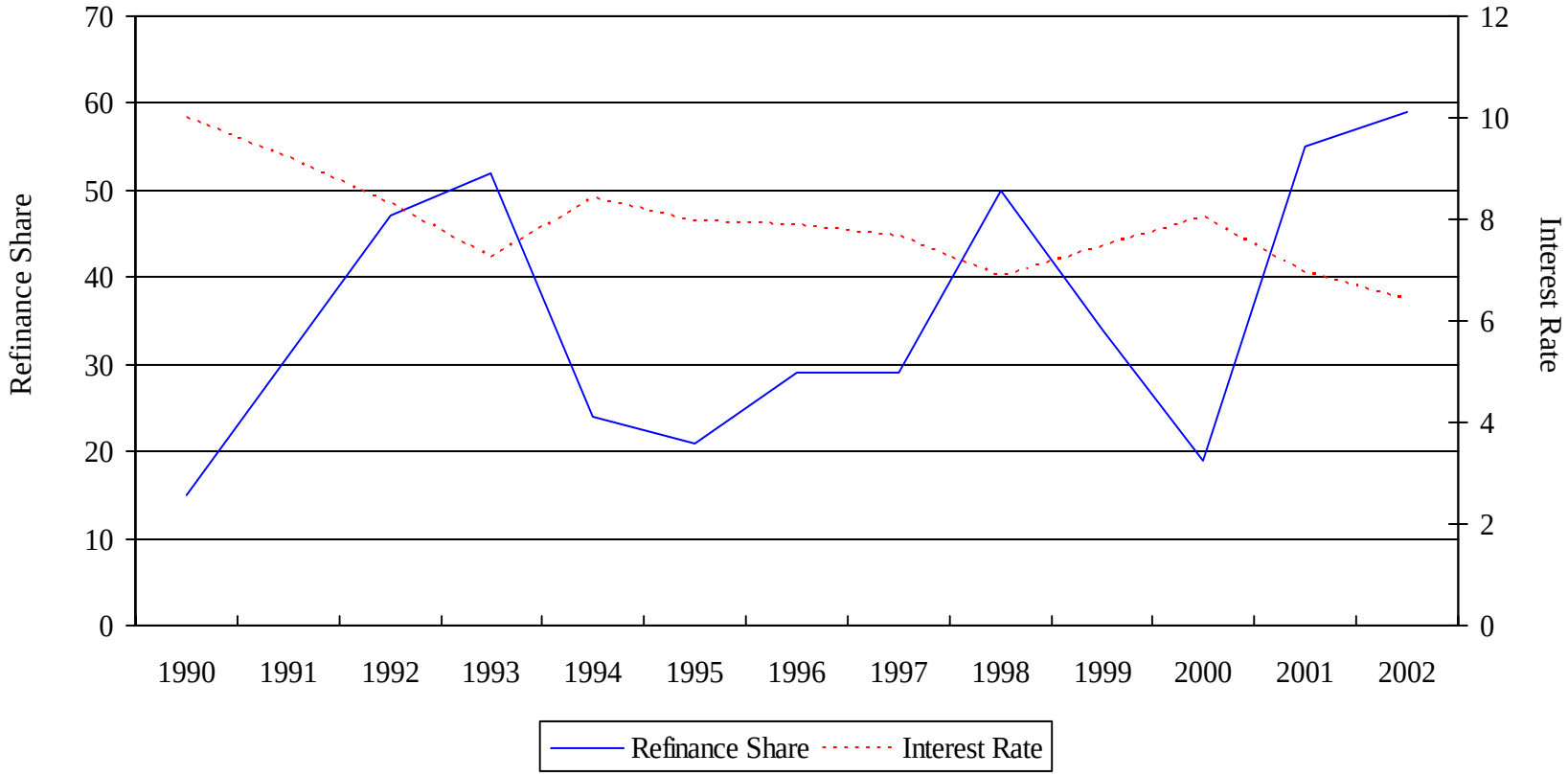
[21] Low-income is defined as no more than 80 percent of area median income, moderate-income is 80 to 120 percent, and upper-income is more than 120 percent.

Figure 1
Refinancing Volume By Interest Rate



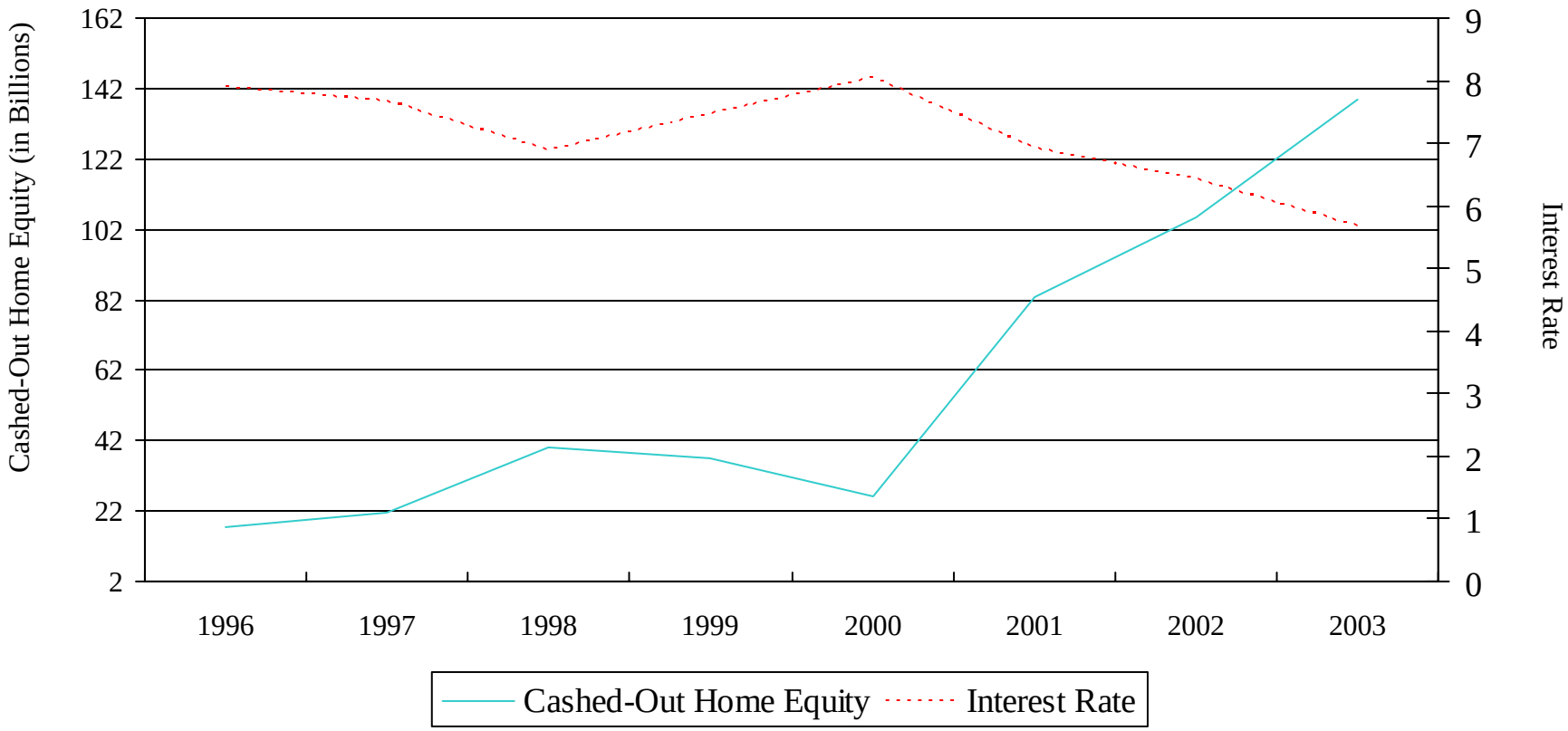
Source: MBA

Figure 2
30 Year Fixed Interest Rate
By Refinance Share of Total Loan Volume (1990-2002)



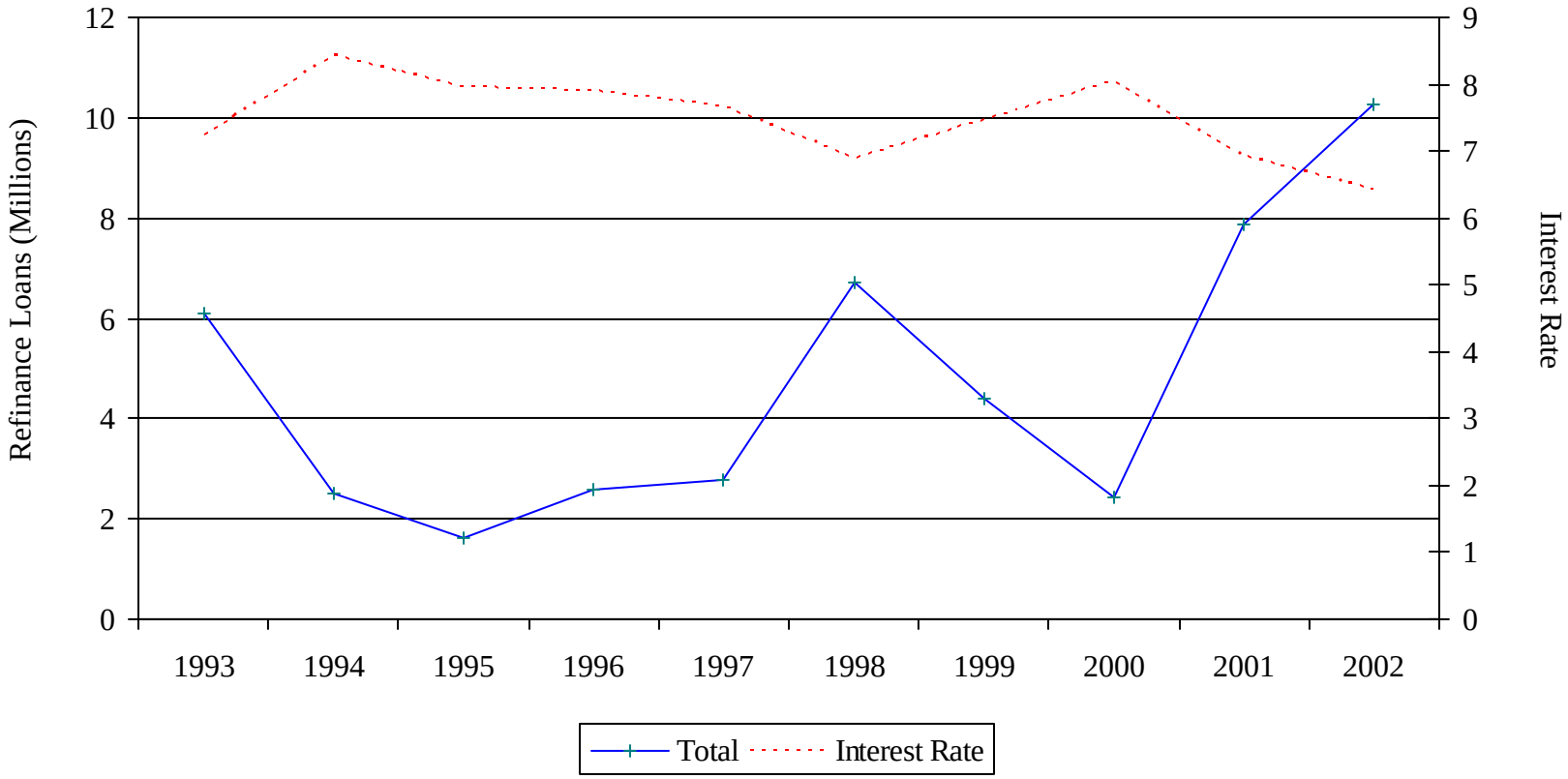
Source: MBA data

Figure 3
Cashed-Out Home Equity



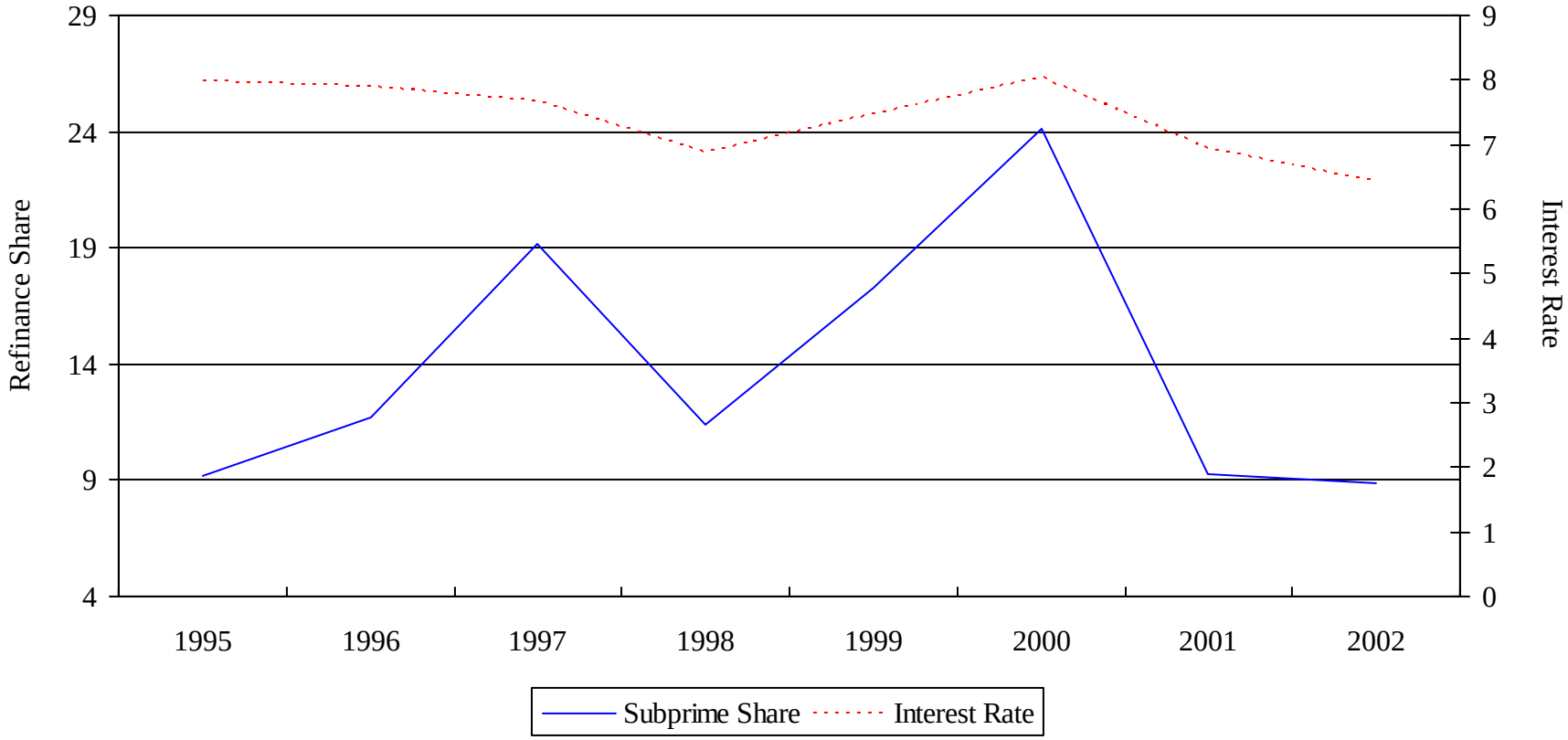
Source: Freddie Mac

Figure 4
Overall Refinance Activity (Loans)



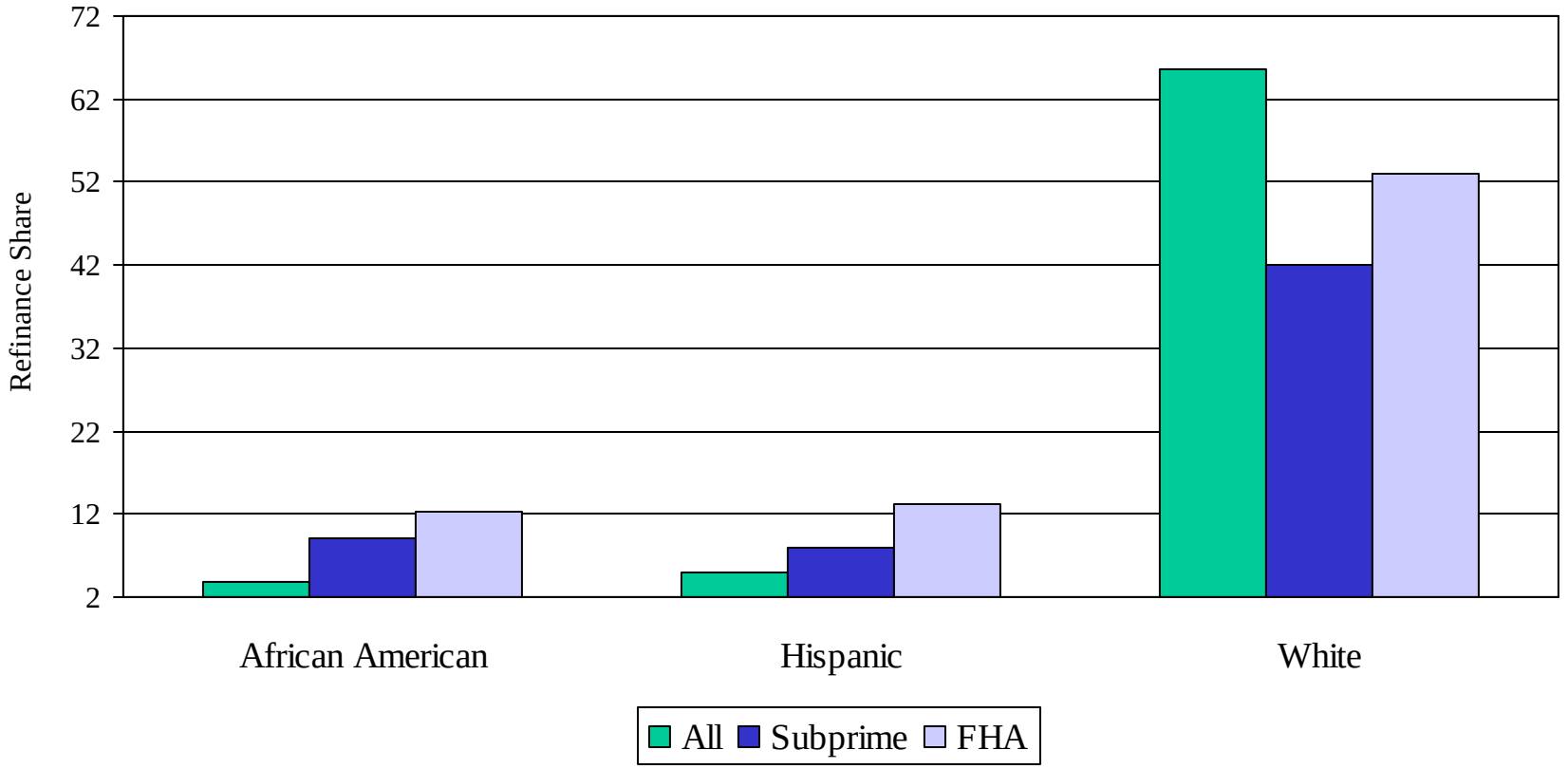
Source: HUD tabulation of HMDA data

Figure 5
Subprime Share of Refinance Loans



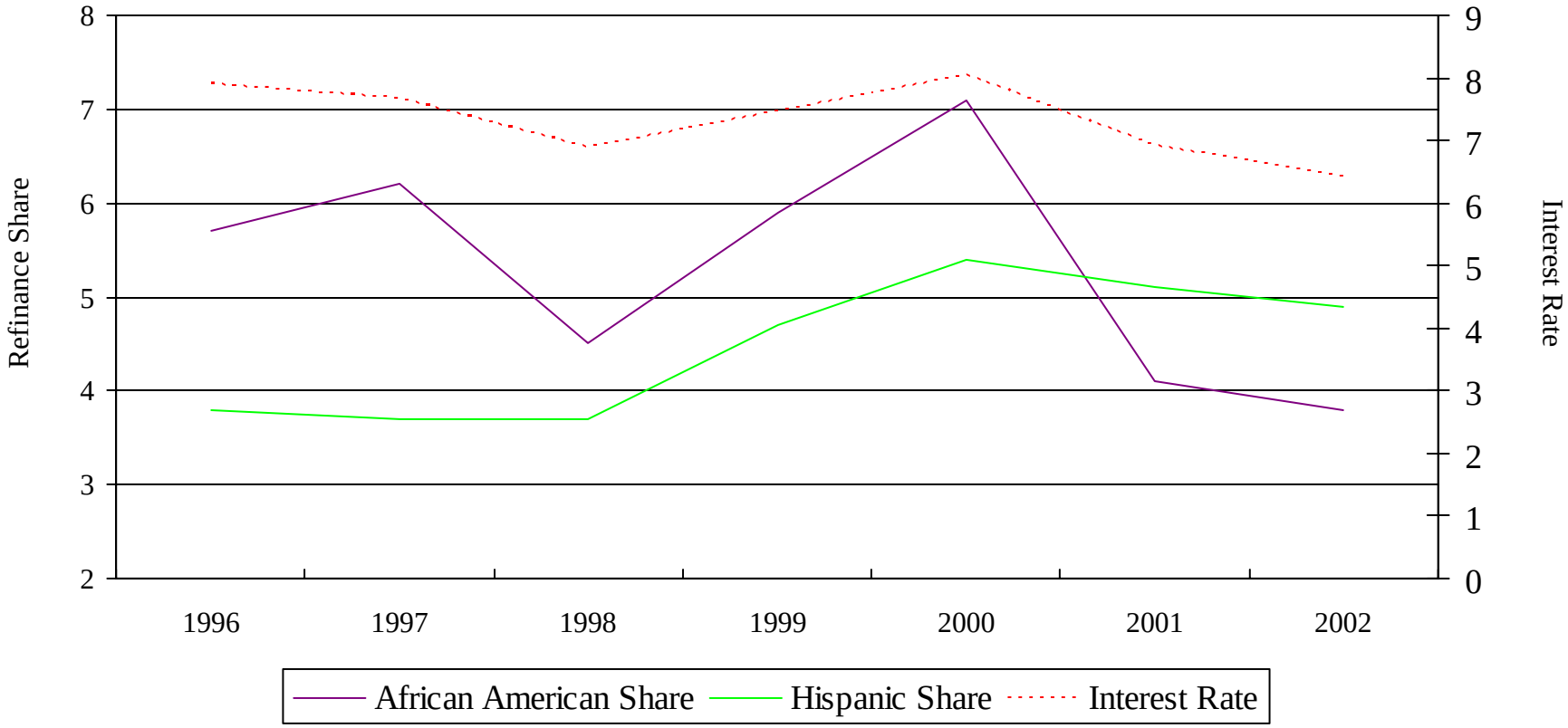
Source: HUD tabulation of HMDA data

Figure 6
Share of 2002 Refinance Loans
By Mortgage Product and Racial or Ethnic Group



Source: HUD tabulation of HMDA data

Figure 7
Share of Refinance Loans
By Mortgage Product and Racial or Ethnic Group



Source: HUD tabulation of HMDA data

Table 1

Mortgage Payment Savings For January 2001 Through December 2003

Year	Quarter	Interest Rate	Originations ($billions) MBA	Refinance Percentage MBA	Total Refinance Volume ($billions)	Cash-Out Refinance % (Freddie Mac)	Cash-Out Refinance and Home Equity Consolidation % (Freddie Mac)	Median of Old/New Rate	Implied Rate	Median Age of Refinanced Loan	Monthly Payment Savings (Billions)	Annual Payment Savings (Billions)
2001	1	7.01%	$418	54%	$226	8.7%	14.2%	1.16	8.13%	1.6	$0.12	$1.45
	2	7.13%	$579	53%	$307	8.7%	14.2%	1.15	8.20%	2.5	$0.15	$1.83
	3	6.97%	$507	46%	$233	8.7%	14.2%	1.14	7.94%	2.7	$0.10	$1.23
	4	6.78%	$739	70%	$517	8.7%	14.2%	1.19	8.07%	2.8	$0.32	$3.84
			$2,243		$1,283						$0.70	$8.35
2002	1	6.97%	$518	58%	$300	8.0%	12.3%	1.16	8.08%	3.4	$0.16	$1.90
	2	6.82%	$552	43%	$237	8.0%	12.3%	1.14	7.77%	3.4	$0.10	$1.23
	3	6.29%	$774	61%	$472	8.0%	12.3%	1.19	7.49%	2.9	$0.27	$3.22
	4	6.08%	$1,010	74%	$747	8.0%	12.3%	1.22	7.41%	2.4	$0.49	$5.84
			$2,854		$1,757						$1.02	$12.19
2003	1	5.84%	$794	71%	$564	7.1%	10.9%	1.23	7.18%	1.9	$0.37	$4.50
	2	5.52%	$1,187	71%	$843	7.1%	10.9%	1.26	6.95%	1.7	$0.60	$7.21
	3	6.01%	$1,199	68%	$815	7.1%	10.9%	1.28	7.70%	1.7	$0.71	$8.57
	4	5.92%	$633	49%	$310	7.1%	10.9%	1.22	7.22%	2.2	$0.20	$2.38
			$3,813		$2,532						$1.89	$22.66
										3-Year Total	$3.60	$43.20

Table 2

Refinance Volume and Monthly Payment Savings By State

	Share of National Refinances	Refinance Originations (Billions) 2001	2002	2003	Monthly Payment Savings (Billions)
National	100.00%	$1,233.65	$1,682.68	$2,514.60	$3.6000
Census Sub-Region					
New England	6.8%	$83.82	$114.33	$170.85	$0.2446
Middle Atlantic	10.1%	$125.20	$170.78	$255.21	$0.3654
East North Central	16.6%	$204.60	$279.08	$417.05	$0.5971
West North Central	5.5%	$67.36	$91.88	$137.31	$0.1966
South Atlantic	15.7%	$194.27	$264.98	$395.98	$0.5669
East South Central	2.9%	$36.07	$49.20	$73.53	$0.1053
West South Central	4.2%	$51.56	$70.33	$105.10	$0.1505
Mountain	8.1%	$100.32	$136.84	$204.49	$0.2928
Pacific	28.9%	$356.30	$485.99	$726.26	$1.0397
Alaska and Hawaii	0.5%	$6.70	$9.14	$13.65	$0.0195
Puerto Rico	0.6%	$7.44	$10.15	$15.17	$0.0217
State					
Alaska	0.13%	$1.60	$2.18	$3.26	$0.0047
Alabama	0.73%	$8.97	$12.24	$18.29	$0.0262
Arkansas	0.32%	$3.94	$5.37	$8.03	$0.0115
Arizona	2.07%	$25.57	$34.87	$52.12	$0.0746
California	24.80%	$305.97	$417.34	$623.67	$0.8929
Colorado	3.37%	$41.51	$56.62	$84.62	$0.1211
Connecticut	1.57%	$19.38	$26.43	$39.50	$0.0565
District of Columbia	0.26%	$3.21	$4.38	$6.55	$0.0094
Delaware	0.29%	$3.52	$4.80	$7.18	$0.0103
Florida	4.05%	$50.01	$68.21	$101.94	$0.1459
Georgia	2.55%	$31.47	$42.93	$64.15	$0.0918
Hawaii	0.42%	$5.14	$7.01	$10.47	$0.0150
Iowa	0.51%	$6.29	$8.58	$12.83	$0.0184
Idaho	0.34%	$4.21	$5.74	$8.57	$0.0123
Illinois	5.26%	$64.93	$88.56	$132.35	$0.1895
Indiana	1.63%	$20.08	$27.39	$40.94	$0.0586
Kansas	0.60%	$7.44	$10.15	$15.16	$0.0217
Kentucky	0.79%	$9.72	$13.26	$19.82	$0.0284
Louisiana	0.63%	$7.74	$10.56	$15.78	$0.0226
Massachusetts	3.91%	$48.19	$65.73	$98.22	$0.1406
Maryland	2.59%	$32.01	$43.66	$65.24	$0.0934

Table 2 (Continued)

Refinance Volume and Monthly Payment Savings By State

	Share of National Refinances	Refinance Originations (Billions) 2001	2002	2003	Monthly Payment Savings (Billions)
Maine	0.28%	$3.51	$4.79	$7.16	$0.0102
Michigan	4.55%	$56.10	$76.52	$114.35	$0.1637
Minnesota	2.22%	$27.44	$37.43	$55.94	$0.0801
Missouri	1.65%	$20.34	$27.74	$41.45	$0.0593
Mississippi	0.33%	$4.11	$5.60	$8.37	$0.0120
Montanna	0.17%	$2.06	$2.81	$4.20	$0.0060
North Carolina	2.13%	$26.26	$35.81	$53.52	$0.0766
North Dakota	0.06%	$0.78	$1.06	$1.58	$0.0023
Nebraska	0.33%	$4.08	$5.56	$8.32	$0.0119
New Hampshire	0.50%	$6.13	$8.36	$12.49	$0.0179
New Jersey	3.80%	$46.93	$64.01	$95.66	$0.1369
New Mexico	0.37%	$4.61	$6.28	$9.39	$0.0134
Nevada	0.79%	$9.73	$13.27	$19.84	$0.0284
New York	3.35%	$41.34	$56.39	$84.27	$0.1206
Ohio	3.21%	$39.54	$53.94	$80.60	$0.1154
Oklahoma	0.41%	$5.08	$6.93	$10.36	$0.0148
Oregon	1.26%	$15.53	$21.18	$31.65	$0.0453
Pennsylvania	3.05%	$37.68	$51.39	$76.80	$0.1099
Rhode Island	0.41%	$5.11	$6.97	$10.42	$0.0149
South Carolina	0.92%	$11.39	$15.53	$23.21	$0.0332
South Dakota	0.11%	$1.41	$1.92	$2.87	$0.0041
Tennessee	1.09%	$13.49	$18.41	$27.50	$0.0394
Texas	2.85%	$35.11	$47.89	$71.57	$0.1025
Utah	0.99%	$12.19	$16.63	$24.85	$0.0356
Virgina	2.86%	$35.24	$48.07	$71.83	$0.1028
Vermont	0.16%	$2.01	$2.75	$4.10	$0.0059
Washington	3.00%	$36.96	$50.42	$75.34	$0.1079
Wisconsin	2.04%	$25.20	$34.37	$51.36	$0.0735
West Virginia	0.19%	$2.34	$3.20	$4.77	$0.0068
Wyoming	0.09%	$1.06	$1.45	$2.16	$0.0031

Source: HMDA Data for Refinance Share, MBA Data for Refinance Originations

Table 3

Refinance Activity By Mortgage Product (Number of Refinance Loans)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Conventional Prime	5,193,426	2,041,197	1,345,499	2,057,989	2,029,925	5,301,244	3,314,756	1,747,676	6,555,410	8,790,210
Conventional Subprime	69,318	118,594	151,164	302,529	536,742	763,937	757,077	586,522	732,424	909,302
Manufactured Home	9,368	40,379	38,841	45,234	58,317	89,014	53,193	33,993	32,558	13,430
FHA	581,315	203,240	64,286	111,598	106,503	334,823	183,190	58,012	405,703	379,696
VA	244,337	115,874	38,799	59,155	56,765	215,632	77,464	7,027	150,560	158,407
RHS	665	508	270	1,282	1,111	564	555	371	719	1,815
Total	6,098,429	2,519,792	1,638,859	2,577,787	2,789,363	6,705,214	4,386,235	2,433,601	7,877,374	10,252,860
Conventional Prime	85.2%	81.0%	82.1%	79.8%	72.8%	79.1%	75.6%	71.8%	83.2%	85.7%
Conventional Subprime	1.1%	4.7%	9.2%	11.7%	19.2%	11.4%	17.3%	24.1%	9.3%	8.9%
Manufactured Home	0.2%	1.6%	2.4%	1.8%	2.1%	1.3%	1.2%	1.4%	0.4%	0.1%
FHA	9.5%	8.1%	3.9%	4.3%	3.8%	5.0%	4.2%	2.4%	5.2%	3.7%
VA	4.0%	4.6%	2.4%	2.3%	2.0%	3.2%	1.8%	0.3%	1.9%	1.5%
RHS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: HMDA data.

Note: HMDA does not have a field that identifies subprime and manufactured home loans. HUD annually compiles a list of subprime and manufactured home specialists that report under HMDA.

Table 4

Mortgage Refinancing by Borrower Income (Number of Refinance Loans)

Percent of the Area Median Income	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Not More Than 50%	159,832	117,203	80,874	141,086	184,618	333,118	342,636	235,641	444,843	574,777
50-60%	132,024	79,386	57,252	97,745	124,247	233,095	226,576	145,802	341,940	448,660
60-80%	430,906	216,114	148,267	254,952	314,122	615,858	543,049	336,247	887,215	1,168,052
Low-Income	722,762	412,703	286,393	493,783	622,987	1,182,071	1,112,261	717,690	1,673,998	2,191,489
80-90%	281,350	121,986	81,739	139,292	169,828	352,455	282,720	167,687	484,950	627,080
90-100%	310,832	128,174	86,178	146,192	171,969	357,013	275,678	164,117	494,179	636,881
100-120%	619,625	237,882	158,957	266,242	318,221	669,707	505,850	286,617	914,832	1,177,021
Moderate-Income	1,211,807	488,042	326,874	551,726	660,018	1,379,175	1,064,248	618,421	1,893,961	2,440,982
120-150%	807,054	282,433	190,369	311,907	373,943	820,769	580,040	320,066	1,104,673	1,418,783
More Than 150%	1,879,690	632,719	414,437	614,815	767,640	1,719,016	1,175,317	615,727	2,346,998	3,147,635
Upper-Income	2,686,744	915,152	604,806	926,722	1,141,583	2,539,785	1,755,357	935,793	3,451,671	4,566,418
Not Available	1,477,116	703,895	420,786	605,556	364,775	1,604,183	454,369	161,697	857,744	1,053,971
Total	6,098,429	2,519,792	1,638,859	2,577,787	2,789,363	6,705,214	4,386,235	2,433,601	7,877,374	10,252,860

Source: HMDA data.

Note: Low-income is defined as no more than 80 percent of area median, moderate-income is 80 to 120 percent, and upper-income is more than 120 percent.

Table 5a

Refinance Activity By Mortgage Product and Racial or Ethnic Group (Number of Refinance Loans)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
						All				
American Indian	19,797	10,587	6,125	7,880	8,427	18,997	14,194	8,285	20,076	30,313
Asian	233,889	81,959	40,218	54,475	59,403	172,128	102,960	46,226	234,169	368,124
African American	160,344	130,238	99,203	146,776	173,942	303,504	259,583	173,696	322,714	389,562
Hispanic	197,942	118,340	70,590	97,137	102,351	246,124	206,811	132,238	399,026	502,489
White	5,006,151	1,954,321	1,250,286	1,949,022	2,003,522	4,930,153	2,933,707	1,494,670	5,230,102	6,718,821
Other	30,010	16,737	13,150	18,710	30,393	61,452	37,781	17,228	69,349	133,671
Not Provided	300,883	143,659	119,546	243,428	346,079	818,403	733,365	513,861	1,426,106	1,878,922
Not Applicable	28,676	12,958	10,514	16,446	18,042	30,529	22,226	12,477	33,557	34,699
Joint	120,737	50,993	29,227	43,913	47,204	123,924	75,608	34,920	142,275	196,259
Total	6,098,429	2,519,792	1,638,859	2,577,787	2,789,363	6,705,214	4,386,235	2,433,601	7,877,374	10,252,860
						Subprime				
American Indian	222	412	460	1,012	1,705	2,517	3,643	2,345	2,224	3,622
Asian	3,506	2,869	2,224	3,832	6,678	10,195	9,553	7,619	13,354	20,135
African American	9,466	18,958	24,710	44,534	74,058	102,339	104,796	80,613	72,072	84,043
Hispanic	4,183	7,284	7,544	13,150	21,571	32,220	36,586	32,505	46,042	72,645
White	40,207	66,195	77,485	152,738	269,025	358,262	330,040	252,187	297,973	381,736
Other	784	1,541	3,382	3,915	8,095	7,564	7,059	3,696	7,083	11,544
Not Provided	9,243	18,806	32,887	75,783	144,748	235,348	251,074	200,104	282,326	319,962
Not Applicable	474	565	685	3,956	4,137	7,690	6,675	1,341	2,751	2,535
Joint	1,233	1,964	1,787	3,609	6,725	7,802	7,651	6,112	8,599	13,080
Grand Total	69,318	118,594	151,164	302,529	536,742	763,937	757,077	586,522	732,424	909,302
						FHA				
American Indian	2,943	1,112	262	530	517	2,305	903	391	1,452	1,958
Asian	10,088	3,569	1,114	1,766	1,924	5,796	2,801	958	6,243	6,029
African American	30,408	17,911	6,862	11,624	11,423	35,083	22,444	8,536	50,525	46,705
Hispanic	38,659	21,216	7,659	12,058	15,956	38,589	22,007	7,749	54,257	50,624
White	423,554	131,451	40,805	70,453	64,980	206,470	102,018	33,320	223,100	201,565
Other	2,449	1,488	837	899	1,077	3,339	2,041	530	4,425	4,445
Not Provided	51,890	20,808	4,824	11,162	7,431	33,256	26,558	5,251	55,447	59,146
Not Applicable	7,612	1,394	530	703	837	1,914	653	221	1,671	1,384
Joint	13,712	4,291	1,393	2,403	2,358	8,071	3,765	1,056	8,583	7,840
Grand Total	581,315	203,240	64,286	111,598	106,503	334,823	183,190	58,012	405,703	379,696

Source: HMDA data.

Table 5b

Refinance Share By Mortgage Product and Racial or Ethnic Group

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
					All					
American Indian	0.3%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Asian	3.8%	3.3%	2.5%	2.1%	2.1%	2.6%	2.3%	1.9%	3.0%	3.6%
African American	2.6%	5.2%	6.1%	5.7%	6.2%	4.5%	5.9%	7.1%	4.1%	3.8%
Hispanic	3.2%	4.7%	4.3%	3.8%	3.7%	3.7%	4.7%	5.4%	5.1%	4.9%
White	82.1%	77.6%	76.3%	75.6%	71.8%	73.5%	66.9%	61.4%	66.4%	65.5%
Other	0.5%	0.7%	0.8%	0.7%	1.1%	0.9%	0.9%	0.7%	0.9%	1.3%
Not Provided	4.9%	5.7%	7.3%	9.4%	12.4%	12.2%	16.7%	21.1%	18.1%	18.3%
Not Applicable	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.4%	0.3%
Joint	2.0%	2.0%	1.8%	1.7%	1.7%	1.8%	1.7%	1.4%	1.8%	1.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
					Subprime					
American Indian	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.5%	0.4%	0.3%	0.4%
Asian	5.1%	2.4%	1.5%	1.3%	1.2%	1.3%	1.3%	1.3%	1.8%	2.2%
African American	13.7%	16.0%	16.3%	14.7%	13.8%	13.4%	13.8%	13.7%	9.8%	9.2%
Hispanic	6.0%	6.1%	5.0%	4.3%	4.0%	4.2%	4.8%	5.5%	6.3%	8.0%
White	58.0%	55.8%	51.3%	50.5%	50.1%	46.9%	43.6%	43.0%	40.7%	42.0%
Other	1.1%	1.3%	2.2%	1.3%	1.5%	1.0%	0.9%	0.6%	1.0%	1.3%
Not Provided	13.3%	15.9%	21.8%	25.0%	27.0%	30.8%	33.2%	34.1%	38.5%	35.2%
Not Applicable	0.7%	0.5%	0.5%	1.3%	0.8%	1.0%	0.9%	0.2%	0.4%	0.3%
Joint	1.8%	1.7%	1.2%	1.2%	1.3%	1.0%	1.0%	1.0%	1.2%	1.4%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
					FHA					
American Indian	0.5%	0.5%	0.4%	0.5%	0.5%	0.7%	0.5%	0.7%	0.4%	0.5%
Asian	1.7%	1.8%	1.7%	1.6%	1.8%	1.7%	1.5%	1.7%	1.5%	1.6%
African American	5.2%	8.8%	10.7%	10.4%	10.7%	10.5%	12.3%	14.7%	12.5%	12.3%
Hispanic	6.7%	10.4%	11.9%	10.8%	15.0%	11.5%	12.0%	13.4%	13.4%	13.3%
White	72.9%	64.7%	63.5%	63.1%	61.0%	61.7%	55.7%	57.4%	55.0%	53.1%
Other	0.4%	0.7%	1.3%	0.8%	1.0%	1.0%	1.1%	0.9%	1.1%	1.2%
Not Provided	8.9%	10.2%	7.5%	10.0%	7.0%	9.9%	14.5%	9.1%	13.7%	15.6%
Not Applicable	1.3%	0.7%	0.8%	0.6%	0.8%	0.6%	0.4%	0.4%	0.4%	0.4%
Joint	2.4%	2.1%	2.2%	2.2%	2.2%	2.4%	2.1%	1.8%	2.1%	2.1%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: HMDA data.