

# **The Economic Contribution of the Mortgage Refinancing Boom**

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The nation's housing and mortgage markets are in the midst of another record-breaking year. Home sales and mortgage origination volumes have never been stronger and single-family homebuilding and real house price gains are as strong as they have been in a quarter century.

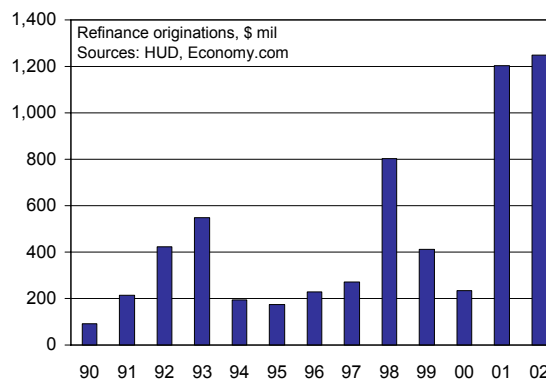
The housing and mortgage markets have been instrumental in supporting the broader economy. Last year's recession would have been substantially more severe and this year's recovery even weaker if not for the strength of these markets. Nearly one-third of the nation's economic growth since the beginning of this decade is attributable to the impacts of the strong housing and mortgage markets.<sup>1</sup>

Although the economic contribution of housing activity is well documented, the contribution of refinance activity to the national economy has not. An estimated \$1.25 trillion in mortgages will be refinanced this year, in addition to the \$1.2 trillion refinanced last year. The refinancing boom is enabling many consumers to lower their debt payments, while enabling others to raise cash to finance more spending. Other homeowners who refinanced are restructuring their liabilities by reducing the duration of their higher-cost mortgages and locking in historically low long-term interest rates. Still others with new refinanced mortgages are saving enough to do all of these things.

Overall, the economic benefits of the refinancing boom are widespread, reaching every region of the country. This article will show how refinancing activity affected the economy and quantifies the refi-boom's national and regional economic contribution.

**Refi Boom.** The current mortgage refinancing boom is unprecedented. Since it began two years ago, close to \$2.5 trillion in mortgage debt has been refinanced, equal to approximately 40 percent of all mortgage debt outstanding (see Chart 1). The previous refinancing record was set in 1998 when some \$800 billion in mortgage debt was refinanced, about 20 percent of the mortgage debt outstanding in that year.

Chart 1: A Record Year for Refinancings



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<sup>1</sup> This is an update to the estimate provided and described in "Housing's Rising Contribution," Homeownership Alliance, June 2002 at [http://www.homeownershipalliance.com/media/press/zandi\\_study.pdf](http://www.homeownershipalliance.com/media/press/zandi_study.pdf)

There have been three refinancing booms in recent years, defined as periods in which the more than one-half of mortgage originations are refinancings. The booms occurred in 1992-1993, 1998, and 2001 to the present (see Chart 2).

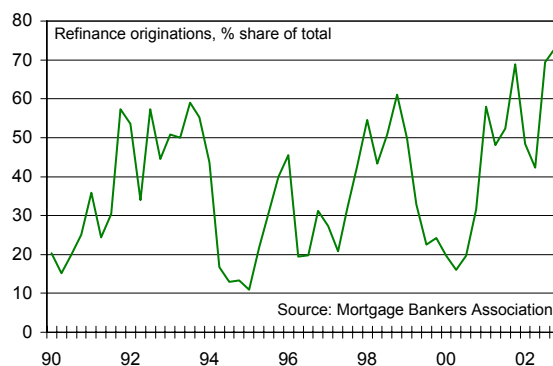
The current refinancing boom is taking place from coast-to-coast. The most substantial increases in activity have been in the Northeast corridor from Boston, MA to Washington, D.C. and in Southern California. Long Island, NY has experienced a nearly six-fold increase in refi activity during the past two years. Extraordinarily strong refi gains have also been experienced in metropolitan areas scattered across the country, including Minneapolis, MN, Miami, FL, Orlando, FL, Milwaukee, WI, and Chicago, IL.

Fueling this boom is a dramatic decline in mortgage rates, with fixed mortgage rates sliding to a 37-year low of close to 6% and rates on adjustable mortgages falling to a record low of just over 4% (see Chart 3). Mortgage transaction costs have also declined substantially. Fees and points have recently fallen below 50 basis points, compared to 100 basis points in the mid-1990s and 150 basis points a decade ago (see Chart 4).<sup>2</sup>

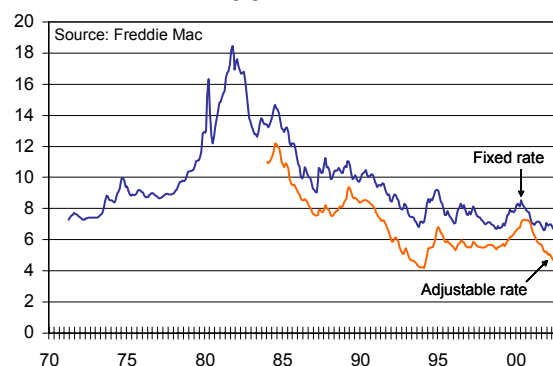
With mortgage rates falling so substantially, a large number of homeowners have discovered that the after-tax cost saving on a new, lower-rate loan is substantially greater than the transaction costs involved with the refinancing. At the start of the refi boom two years ago, nearly all of the close to \$5 trillion in mortgage debt outstanding could be profitably refinanced by homeowners at a 6% mortgage rate. Meaning that mortgage borrowers could recoup the transaction costs involved in the refinancing from the lower interest costs within one year of the refinancing.

Facilitating the soaring refinancing activity has been very strong gains in house prices. Given booming housing demand and shortages of land zoned properly and available for

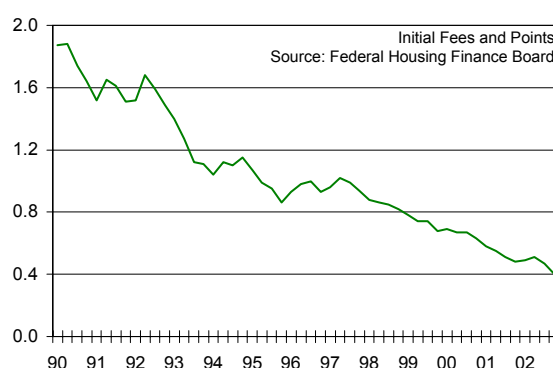
**Chart 2: Refi Booms**



**Chart 3: Rock-Bottom Mortgage Rates**



**Chart 4: Plunging Mortgage Transaction Costs**



<sup>2</sup> Freddie Mac is the source for the mortgage rates and the Federal Housing Finance Board is the source for the mortgage fees and points.

development in high growth markets, the value of housing has soared by close to \$5 trillion during the past five years, a whopping annualized increase of nearly 10%.<sup>3</sup> The average homeowner has thus experienced more than \$70,000 increase in the value of their home since the late 1990s.

Rising housing values have allowed mortgage lenders to more easily accommodate refinancing homeowners, as lenders have become more confident in the creditworthiness of borrowers. This is particularly true in the Northeast and California; regions of the country in which lenders had been reluctant to refinance loans during the 1998 refinancing boom. These regions had experienced falling or flat housing values throughout much of the early and mid-1990s. Indeed, despite the economy's recent difficulties, the weakening in mortgage credit quality to date has been very modest, particularly in the Northeast and California.<sup>4</sup>

Homeowners have also become more willing and able to tap the rising equity in their homes through increased mortgage borrowing via cash-out refinancings. Cash-outs are refinancings in which borrowers' increase their mortgage balance by more than the transaction costs involved in the refinancing.<sup>5</sup> Freddie Mac estimates that well over one-half of refinanced mortgages in the past two years are cash-outs, in that the new mortgage balances is more than 5% greater than the original balance.

Mortgage borrowing has become an increasingly attractive method for raising cash, as credit card interest rates have remained very high. While the interest rate on credit card debt being assessed interest has fallen from closer to 16% at the start of the decade according to the Federal Reserve Board, it remains at well over 13% currently. Given that mortgage interest payments are tax deductible and credit card interest payments are not, the financial advantages of mortgage borrowing are obvious. Credit card debt outstanding will experience its slowest growth on record this year, save during 1980 when credit controls were temporarily imposed.

**Economic impact.** The refinancing boom has been instrumental in supporting the economy's performance during the past two years. An estimated close to one-fifth of the national economy's real GDP growth of just over 1% per annum since late 2000 is directly attributable to the refinancing boom.<sup>6</sup>

The conduits through which the refinancing boom impacts the economy are several-fold. To date, the most important link has been through the cash raised in cash-out

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<sup>3</sup> Other factors have also contributed to quickly rising house prices, including greater regulatory and labor costs.

<sup>4</sup> According to the Mortgage Bankers Association, the 30 days and over delinquency rate on conventional mortgages is currently near 3%, compared to a peak of 4% during the early 1990s' recession.

<sup>5</sup> Freddie Mac defines a cash-out refinancing to be a refi in which the mortgage balance is more than 5% greater than the original balance.

<sup>6</sup> This result is based on a simulation of Economy.com's econometric model system. The results do not include the related but separate economic contribution from surging home equity borrowing, including home equity lines of credit and closed-end second mortgages. Home equity debt outstanding is on pace to rise \$100 billion this year on top of over \$50 billion last year. The refinancing boom and increase home equity borrowing together account for nearly one-fourth of the economy's growth since late 2000.

refinancings. An expected \$170 billion will be raised through cash-outs this year, up from \$100 billion in 2001 and \$45 billion in 2000 (see Chart 5).<sup>7</sup>

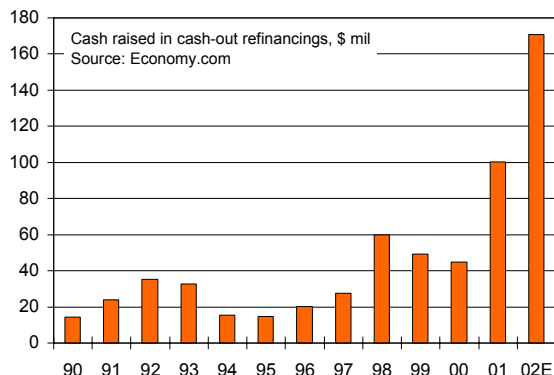
Based on a summer 2002 survey conducted by Fannie Mae, it is safe to conclude that well over one-half of the cash being raised is being used to directly finance more spending. This would include everything from home improvements, to vehicle purchases, vacations, education, medical expenses, and given that many households are hard-pressed by the soft economy,<sup>8</sup> even general living expenses (see Chart 6).<sup>8</sup>

Close to one-third of the cash raised in cash-outs is being used to repay other higher cost credit card, other installment debt, and even second mortgage debt. When combined with the lower debt payments being enjoyed by those homeowners refinancing and not significantly increasing their mortgage balance, this is freeing up a significant amounts of cash that is also supporting spending. Indeed, refinancing households are saving an estimated nearly \$10 billion in annual interest payments on their mortgage and consumer installment liabilities.

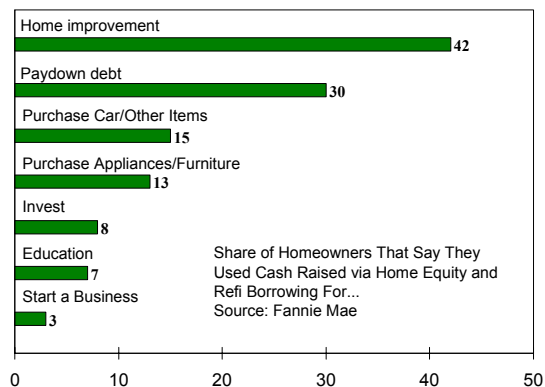
The remaining cash raised via cash-outs is being used to finance other investments, much of which is likely other real estate assets. This is thus further supporting housing demand, house price gains, and even more spending through the resulting lift to household net worth. Magnifying the importance of this positive wealth effect is that it is helping to offset the negative effects of the recent substantial declines in stock values.

The current refinancing boom will also support the economy's longer-term performance as it is allowing mortgage borrowers to lock in very low long-term interest rates. The vast majority of those refinancing are choosing fixed rate mortgages; even those whose original mortgage was an adjustable rate loan. An estimated only one-fifth of all household liabilities, composed largely of mortgage and consumer installment debt, have

**Chart 5: Homes Have Become a Cash Engine**



**Chart 6: Uses of Cash Raised via Cash-Outs and Home Equity Borrowing**

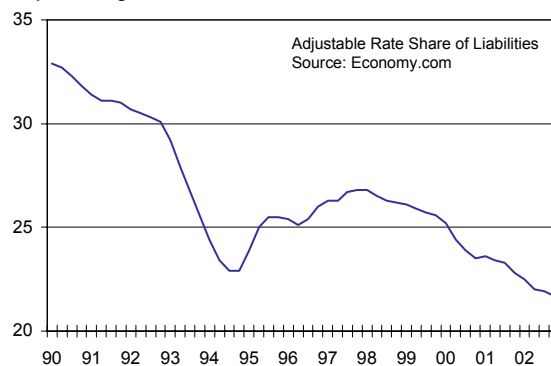


<sup>7</sup> The basis for this estimate is provided in the methodology section of this paper.

<sup>8</sup> See "2002 Fannie Mae National Housing Study," which is available at <http://www.fanniemae.com/global/pdf/media/survey/survey2002.pdf>. These results are consistent with a July 2000 Federal Reserve Board study entitled "The Effects of Recent Mortgage Refinancing," *Federal Reserve Bulletin*, regarding the 1998 refinancing boom.

interest rates that adjust within one year of a change in market interest rates.<sup>9</sup> This compares to one-fourth of liabilities in the mid-1990s and one-third a decade ago (see Chart 7). The refinancing boom is thus largely responsible for allowing households to insulate themselves from the potential negative financial of rising interest rates. This may very well have key positive macroeconomic implications when interest rates ultimately do rise.

**Chart 7: Households are Increasingly Insulated from the Impact of Higher Rates**



**Regional impact.** The refinancing boom has provided a much needed lift to economies from coast-to-coast. Every region of the country is benefiting, due in large part to the substantial gains in home values experienced nationwide over the past five years.

The most significant economic contribution has been in the Northeast and on the West coast. New England households will raise an estimated nearly \$14 billion in cash this year through cash-out refinancings, in addition to the nearly \$8 billion raised last year (see Table 1). This and the other economic benefits of refinancing will support added consumer spending and housing activity that will account for an astounding one-third of the region’s real gross product growth this year (see Table 2).

The refinancing boom has been particularly helpful to the hard-pressed Boston, MA economy. With house prices in the metro area doubling since the mid-1990s, homeowners are tapping a significant amount of homeowners’ equity. The additional spending this has prompted has been instrumental in ensuring that the metro area’s economy doesn’t fall back into recession under the weight of contracting technology and financial services industries.

The soft West coast economy has also benefited enormously from the refinancing boom. This is particularly true in the region extending from Seattle, WA to the Bay Area of California. That the Portland, OR and San Francisco, CA metro area economies will expand at all this year is due to surging refinancing activity. The Seattle and San Jose, CA economies will contract again this year given the problems in aerospace and technology industries, but the downturn in these economies would have substantially more debilitating if not for the ability and willingness of homeowners to refinance.

The central part of the country has benefited from the refinancing boom, but less so. Up to one-fifth of the growth in areas such as Illinois, Kansas, and Texas has been driven by refinancing activity. This is largely due to the much more modest gains in house prices homeowners experienced in these regions in recent years.

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<sup>9</sup> It should be noted that this refers to the share of all household liabilities that have interest rates that change within one year of a change in market rates, in contrast to data available from various sources on the share of mortgage originations that have adjustable rates.

**Table 1: Cash Raised in Cash-Out Refinancings**

Billions \$

	1998	1999	2000	2001	2002E
United States	64.1	52.5	43.7	101.6	172.1
New England	4.3	4.0	3.3	7.7	13.7
Boston	2.3	2.1	1.8	4.2	7.4
Hartford	0.2	0.2	0.2	0.4	0.6
Middle Atlantic	8.2	8.0	6.3	15.2	27.6
Albany	0.2	0.1	0.1	0.2	0.4
Bergen-Passaic	0.4	0.5	0.4	1.0	1.8
Middlesex	0.4	0.4	0.3	0.8	1.4
Monmouth	0.4	0.4	0.4	0.9	1.6
Nassau-Suffolk	0.9	0.9	0.7	1.9	3.6
New York	1.3	1.4	1.1	2.7	5.1
Newark	0.6	0.6	0.5	1.2	2.2
Philadelphia	1.1	1.0	0.8	1.9	3.2
Pittsburgh	0.4	0.4	0.3	0.7	1.2
Rochester	0.2	0.2	0.1	0.3	0.4
South Atlantic	10.8	9.3	7.6	17.9	31.5
Atlanta	0.9	0.9	0.7	1.7	2.8
Baltimore	0.6	0.6	0.5	1.1	1.9
Charlotte	0.4	0.3	0.3	0.6	1.0
Miami	0.3	0.3	0.2	0.6	1.0
Norfolk	0.3	0.2	0.2	0.4	0.8
Orlando	0.4	0.3	0.3	0.7	1.2
Raleigh	0.3	0.3	0.3	0.5	0.9
Tampa	0.4	0.4	0.3	0.7	1.2
Washington, D.C.	1.7	1.4	1.1	2.8	5.2
East North Central	7.6	7.0	5.7	13.3	22.3
Chicago	1.8	1.7	1.4	3.3	5.8
Cincinnati	0.3	0.3	0.2	0.5	0.9
Cleveland	0.3	0.3	0.3	0.6	1.0
Columbus	0.3	0.3	0.2	0.5	0.8
Detroit	1.2	1.0	0.8	2.0	3.2
Indianapolis	0.3	0.3	0.2	0.5	0.8
Milwaukee	0.3	0.2	0.2	0.4	0.7
East South Central	2.2	1.9	1.6	3.6	5.8
Memphis	0.2	0.2	0.1	0.3	0.5
Nashville	0.2	0.2	0.2	0.4	0.7
West North Central	2.9	2.5	2.1	4.9	8.1
Kansas City	0.3	0.3	0.3	0.6	1.0
Minneapolis	0.8	0.6	0.5	1.3	2.3
St. Louis	0.6	0.5	0.4	0.8	1.4
West South Central	4.5	3.8	3.2	7.3	12.0
Austin	0.3	0.3	0.2	0.5	0.8
Dallas	0.8	0.6	0.5	1.2	2.0
Ft. Worth	0.3	0.3	0.2	0.5	0.8
Houston	0.7	0.6	0.5	1.1	1.8
New Orleans	0.2	0.2	0.1	0.3	0.6
Oklahoma City	0.2	0.2	0.1	0.3	0.5
San Antonio	0.2	0.2	0.2	0.4	0.7
Mountain	3.7	3.2	2.7	6.3	10.7
Denver	0.6	0.6	0.5	1.2	2.0
Las Vegas	0.3	0.3	0.2	0.5	0.9
Phoenix	0.6	0.5	0.4	1.0	1.8
Salt Lake City	0.4	0.3	0.2	0.6	0.9
Pacific	12.8	12.2	9.8	22.8	40.5
Los Angeles	2.4	2.7	2.0	4.8	8.6
Oakland	1.0	1.0	0.9	2.0	3.4
Orange County	1.3	1.2	1.0	2.3	4.1
Portland	0.5	0.4	0.3	0.7	1.2
Riverside	0.7	0.6	0.4	1.0	1.8
Sacramento	0.4	0.4	0.3	0.7	1.3
San Diego	0.9	0.9	0.7	1.7	3.2
San Francisco	0.9	0.9	0.8	1.7	3.0
San Jose	1.1	1.0	0.8	1.8	2.9
Seattle	0.7	0.6	0.5	1.2	2.1

Note: 2002 is an estimate based on historical data available through the third quarter.

Source: Economy.com

**Table 2: Mortgage Refinancing's Economic Contribution**  
Share of Real Gross Product Growth Accounted for by Refinancing

	2001	2002E
United States	17	20
New England	20	34
Boston	34	67
Hartford	9	14
Middle Atlantic	14	21
Albany	9	11
Bergen-Passaic	58	56
Middlesex	21	22
Monmouth	17	43
Nassau-Suffolk	19	33
New York	37	47
Newark	15	25
Philadelphia	12	21
Pittsburgh	12	21
Rochester	25	33
South Atlantic	10	18
Atlanta	13	31
Baltimore	10	20
Charlotte	11	16
Miami	7	15
Norfolk	6	11
Orlando	11	38
Raleigh	6	19
Tampa	8	24
Washington, D.C.	8	21
East North Central	23	17
Chicago	14	19
Cincinnati	16	17
Cleveland	17	16
Columbus	8	12
Detroit	-63	24
Indianapolis	11	13
Milwaukee	20	19
East South Central	12	12
Memphis	15	18
Nashville	10	14
West North Central	12	16
Kansas City	12	11
Minneapolis	13	22
St. Louis	24	25
West South Central	8	13
Austin	35	20
Dallas	7	14
Ft. Worth	13	15
Houston	5	11
New Orleans	8	16
Oklahoma City	9	17
San Antonio	12	13
Mountain	11	20
Denver	26	86
Las Vegas	6	11
Phoenix	9	26
Salt Lake City	12	24
Pacific	25	31
Los Angeles	32	34
Oakland	28	45
Orange County	26	38
Portland	22	191
Riverside	10	17
Sacramento	10	24
San Diego	13	23
San Francisco	25	109
San Jose	na	na
Seattle	na	na

Notes:

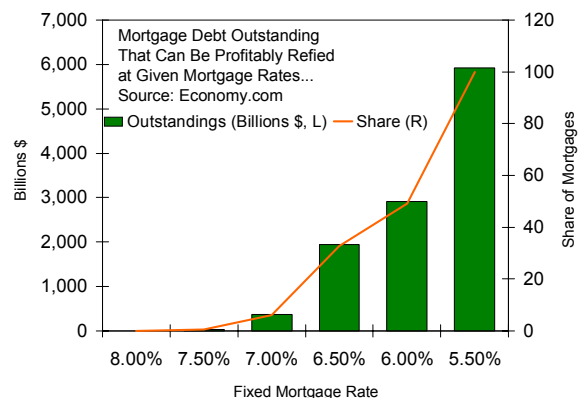
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2002 is an estimate based on historical data available through the third quarter.

Source: Economy.com

**Risks.** The refinancing boom could quickly moderate in the coming year if mortgage rates rise even modestly. At the current fixed mortgage interest rate of about 6 percent, around one-half of mortgages outstanding could be profitably refinanced (see Chart 8). At a 6.5% fixed rate, however, less than one-third of borrowers are able to profitably refi, and at a 7% fixed rate, the pool of available refiers largely evaporates.<sup>10</sup>

**Chart 8: Pool of Potential Refiers Will Evaporate with Higher Rates**

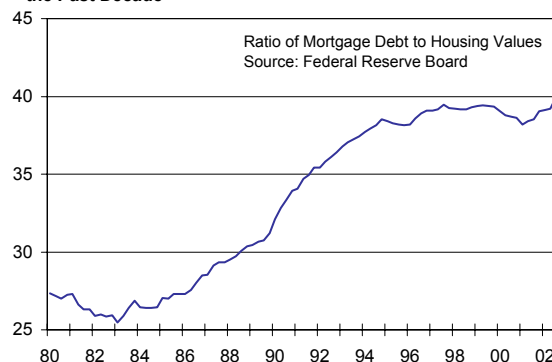


Even if mortgage rates do rise quickly in 2003, however, the economic benefits of the current refinancing activity will linger on for sometime. Those homeowners with lower monthly mortgage payments will be able to spend more of their budgets on other things, and many cash-out borrowers are only now receiving checks, which they will spend well into next year.

There is also worry over the potential for heightened credit risk posed by the increased mortgage debt loads of cash-out borrowers. Households' mortgage liabilities have been growing at a near double digit pace during the refinancing boom, more than twice the growth in household incomes.<sup>11</sup> That households are under some financial stress is evident from an erosion in various measures of mortgage credit quality during the past two years.<sup>12</sup>

This risk is at least partially mitigated, however, by recent strong house price gains. Despite the strong growth in mortgage debt, this growth has largely just kept pace with the growth in housing values. The aggregate loan-to-value ratio, as measured by the ratio of mortgage debt to housing values, has thus remained essentially unchanged for more than a decade (see Chart 9).<sup>13</sup> While any substantial and sustained decline in house prices would negatively impact mortgage loan performance, a broad-based decline in national house prices remains highly unlikely. This is not to say that various metro areas, particularly in areas where the dramatic house price gains of recent years are difficult to explain by underlying housing

**Chart 9: Aggregate LTV Has Been Stable During the Past Decade**



<sup>10</sup> The growing popularity of more sophisticated adjustable rate mortgage products, such as 3-1, 5-1, and 7-1 year ARMS could extend the refinancing boom for longer than is suggested by this analysis.

<sup>11</sup> At least part of the strong growth in mortgage liabilities can be explained by a rise in homeownership, which has risen from 67.5% to 67.8% during the current refinancing boom.

<sup>12</sup> The Mortgage Bankers Association reports that mortgage delinquencies and foreclosures have risen during this period.

<sup>13</sup> The substantial rise in the aggregate LTV beginning in the late 1980s and throughout the 1990s is largely due to the 1987 tax law change which eliminated the interest rate deductibility of non-mortgage debt.

demand and supply factors, will not experience house price declines and thus experience heightened mortgage credit problems.<sup>14</sup>

**Conclusions.** The mortgage refinance boom of the past two years has exerted a substantial positive impact on the economy. Last year's recession would have been substantially more severe and this year's recovery measurably weaker if not for the refinancing boom. The economic benefits have been widespread and enjoyed in every region of the country, particularly in California and the Northeast.

The refinancing activity has allowed some homeowners to lower their debt payments, while allowing others to raise cash to finance more spending, and still others to restructure their liabilities by reducing their higher-cost liabilities and locking in historically low long-term interest rates. For some homeowners the interest rate savings on their new refinanced mortgages are so substantial they are able to do all of these things.

Even if refinancing activity were to soon weaken, the positive benefits of the refinancing boom of the past two years will continue to support the economy for sometime to come.

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<sup>14</sup> Metro areas in California, the Northeast corridor and in south Florida appear at most risk.

**Methodology.** The methodology used to derive historical estimates of mortgage refinancing dollar volumes, cash-out refinancing dollar volumes, and the distribution of the dollar volume of mortgages that can be profitably refinanced at various mortgage rates are described in the discussion that follows.

The dollar volume of mortgage refinancings is derived based on data available from various sources, including discontinued data from HUD available through the fourth quarter of 1997, the Mortgage Bankers Association weekly refinance index, and annual Home Mortgage Disclosure Act based data available down to the county level.

At a national level, the HUD data is projected to the current period using the MBA refi index based on an econometric relationship between the two series in the 1990-1997 period over which they overlap. At a metro area level, the HMDA data is converted to a quarterly series using the quarterly pattern in the national quarterly series. The HMDA data is benchmarked so that the sum of refinance volumes across the nation's counties sum to the HUD-based national totals.

The dollar volume of cash-out refinancings is derived based on data available from Freddie Mac on the share of refinancings that are cash-out, the Federal Reserve Board's 1998 survey of refinancing activity, and a survey of mortgage lenders conducted by Economy.com. The Economy.com survey determines the average and median amounts of cash being raised by borrowers via cash-outs, which is then benchmarked to the 1998 Federal Reserve Board survey results.

National cash-out dollar volumes are equal to the product of the total dollar volume of refinancings, the cash-out share of refinancings, and the average amount of cash raised in a cash-out. Metropolitan area cash-out refinance dollar volumes are derived in the same way, based on metro area specific estimates of the cash-out share of refinancings and the average amount of cash raised in a cash-out. These metro area specific estimates are derived using national level econometric relationships estimated between the cash-out share and mortgage rates, homeowners' equity, and mortgage underwriting standards, and the average amount of cash raised in a cash-out and house prices. Metro area estimates for homeowners' equity and house prices are substituted into the national level econometric relationships to derive metro area estimates of the cash-out share and the average amount of cash raised in a cash-out.

The distribution of the dollar volume of mortgages that can be profitably refinanced at various mortgage rates is derived based on data available from Lehman Brothers on the distribution of mortgage backed securities outstanding at various coupons. It is assumed that the distribution of coupons on the mortgage backed securities outstanding is the same as for all mortgage debt outstanding. The mortgage debt that can be profitably refinanced is determined by comparing mortgage transaction costs with the interest saving from refinancing into a mortgage at the current mortgage rate from the coupon on existing mortgage debt.