Draft 13: 1/18/2012

Streamlined Refinancings for up to 14 Million Borrowers[1]

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Executive Summary

Frictions in the mortgage market have restricted the ability of millions of borrowers from refinancing their mortgages, hampering monetary policy, slowing the economic recovery, and leading to excessive numbers of foreclosures. We propose a streamlined refinancing program that may benefit up to 14 million of the 22.6 million borrowers with fixed-rate GSE-backed mortgages, leading to possible savings of $36 billion per year in lower mortgage payments. Below we describe the current barriers to refinancings, how our plan would overcome these barriers, and why this plan is in the interest of taxpayers, the GSEs, and other mortgage service providers. We also discuss possible critiques and implementation issues and how such issues can be addressed. This proposal focuses entirely on GSE-backed mortgages but could be extended to those also guaranteed by the FHA and VA, doubling the potential impact.

1) The problem

a) As of June 2011, more than 75% of GSE[3] borrowers with a 30-year fixed-rate mortgage (FRM) have a rate of 5% or more, despite the fact that market-determined mortgage rates have been at or below 5.0% for nearly every

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[1] Similar plans are proposed in the House of Representatives by Representative Dennis Cardoza and in the Senate by Senators Barbara Boxer and Johnny Isakson. The previous version, Draft 12, of this proposal was titled "Streamlined Refinancings for up to 30 Million Borrowers." The decrease to 14 million reflects that a non-GSE streamlined refinancing plan is not currently on the policy table.

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[3] GSEs are the government-sponsored entities Fannie Mae and Freddie Mac.

month in the past two years and are currently around 3.90%.[4] Under normal credit conditions we might have expected three times this many eligible mortgages to have been prepaid, as happened during the last refinancing wave from 2002 to 2003.[5] This suggests tens of millions of borrowers have not taken advantage of a seemingly attractive refinancing proposition.

b) We believe that inefficiencies in the origination and servicing process, combined with GSE surcharges (so-called loan level pricing adjustments and adverse market delivery charges), falling home values, and conservative appraisals have made refinancing nearly impossible for most Americans.

c) In addition to blunting refinancing, these mortgage-market frictions are slowing the economic recovery by limiting the benefits of low interest rates for household spending. Unable to refinance their mortgages the way corporations have been able to refinance their debt, consumers are left with weak balance sheets and mortgage payments often above the cost of renting, contributing to excessive delinquencies and foreclosures. These constraints on refinancing have a disproportionate impact on middle-class borrowers with origination balances under $200,000 and poorer credit and whose employment opportunities have been hit especially hard by the recession.

2) The Offer

a) Every homeowner with a GSE mortgage can refinance his or her mortgage with a new mortgage at a current fixed rate of 4% or less, with the rate subject to change up or down with the price of Agency pass-through Mortgage-Backed Securities (MBS).

b) The homeowner must be current on his or her mortgage or become so for at least three months.

c) NO other qualification or application is required, other than intention to accept the new rate (that is, no appraisal, no income verification, no tax returns, etc.).[6]

d) Minimal paperwork, other than what is needed legally to refinance in homeowner's jurisdiction. The Bureau of Consumer Financial Protection may provide a one-page substitute for TILA, RESPA, and HMDA filings to further reduce paperwork and costs.

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[4] Sources: Author's calculations from Lender Processing Services and Freddie Mac's Primary Mortgage Market Survey.

[5] According to data from HMDA, about 25 million mortgages were refinanced and 10 million more were originated for home purchase in 2002 to 2003, out of a stock of about 47 million mortgages. While some of these mortgages likely overlap, these numbers suggest that upwards of two-thirds of the stock of home mortgages were originated in the last trough of mortgage rates. By comparison in 2010 and the first five months of 2011, fewer than 10 million mortgages were originated according to Lender Processing Services, about one-third the rate of the previous refinancing boom.

[6] Issuers of new mortgages would be indemnified against any other "reps and warranties" violations since the originators have not verified any borrower information other than being current on the outstanding mortgage.

e) Homeowners can choose between a 15- or 30-year amortization schedules for newly issued mortgages.
f) Homeowners may only refinance existing first-lien mortgage debt and cannot cash out or roll multiple mortgages into the new mortgages.
g) GSEs would be required to issue new MBS in large, highly standardized, transparent, and homogeneous pools, as current Ginnie Mae II Jumbo securities are now issued.
h) Existing servicers would be relieved of their liability for past "Reps and Warranties" violations as long as the mortgage is current today and is at least a year old.
i) Existing second-lien holders would be asked to resubordinate to the newly refinanced first mortgage.[7]
j) Existing mortgage insurance contracts should be rolled to the new first mortgage.[8]
k) New title insurance policies must be done in a streamlined process and at low cost, likely a few hundred dollars at most.[9]

3) **An Example of How the Mortgage Math Works**
a) The proposal will break help break through the frictions that are dampening refinancing activity and be profitable for all participants in the mortgage market.
b) Newly issued 30 year GSE MBS trade between 2.7 and 3.0 percent yields in the bond market
c) GSEs currently receive a guarantee fee of 12.5 to 25 basis points on most legacy mortgages. We propose a new guarantee fee of 25 basis points to compensate the GSEs for their costs of implementing this plan, for any possible revenue lost by giving up some "reps and warranties rights," and for the loss in value of their retained portfolio. Assuming that the GSEs currently charge guarantee fees of 15bp, they will get 10 basis points of additional revenue.[10] This fee would have a present value of between 0.6 and 0.8

[7] Second-lien holders strictly benefit from borrowers receiving lower payments on the new mortgage. Second-lien holders who refuse to re-subordinate their second liens on a systematic basis would lose the right to do business with GSEs in the future. This language mirrors a provision in the Boxer Bill.

[8] Mortgage insurers (MIs) benefit from borrowers receiving lower payments on the new mortgages because the default risk of these borrowers is lower, although the MIs also lose the right to make "Reps and Warranties" claims on these past mortgages. The loss of rights might require small compensation from GSEs as part of the package, maybe an additional 10 basis points. However, failure to participate in the plan and re-endorse policies should result in loss of ability to insure new GSE mortgages for all future mortgage insurance business.

[9] Title insurers strongly benefit from this program through much higher volume of new business. Failure to participate in creating these new policies, which would not involve any additional guarantees beyond those made in the original title insurance policy, should result in loss of ability to provide title insurance for all future GSE mortgages.

[10] Our calculations suggest that the GSEs would break even on their losses from their retained mortgage portfolio if they were to have an additional spread of only 15 basis points, so a total GSE

percent of the mortgage amount (the bond market values interest-only payments at a multiple of 6-to-8 times).

d) Servicers would receive the right to originate/service newly issued mortgages to their existing borrowers at a fixed spread to be determined by the GSEs, likely 18-25 basis points.[11] Servicers must agree to independently verified, minimum quality standards in order to obtain the right to originate mortgages under this plan.[12] Servicers who do not agree to these terms will be immediately replaced under the direction of the GSEs.

e) In this example, newly originated refinancings would be originated with mortgage rates of 3.8 to 4.1 percent, with no points or costs to consumers.[13]

f) Servicers of newly issued mortgages under this plan would not be responsible for "reps and warranties" violations of past servicers/originators.

4) Large economic benefit for consumers, the housing market, and the economy

a) According to Appendix Table 1, as of June 2011 only about 18 percent of GSE mortgages mortgages were originated in the last 18 months when there have been two periods of exceptionally low mortgage rates, well below what would have been expected based on previous refinancing waves with low mortgage rates.

b) About 63 percent of GSE 30-year fixed-rate mortgages have a rate above 5.5 percent as of June 2011, despite large potential savings for these borrowers from refinancing.

c) For our computations, we turn to an analysis of about $3.3 trillion of mortgage pools, including almost all Fannie Mae and Freddie Mac mortgage pools as obtained from Knowledge Decision Sciences.[14] A spreadsheet detailing our computations is available on our website at: http://www4.gsb.columbia.edu/realestate/research/housingcrisis/.

d) For our computations, we use a simulated mortgage rate of 4 percent for 30-year mortgages and 3.5 percent for 15-year mortgages with no points or

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spread below 25bp would work. Making this "break-even" for the GSEs would reduce the estimated rates to consumers in this proposal by about 0.1 percent.

[11] Note that origination/servicing on newly originated mortgages today earns a spread of about 35 basis points. With low origination costs and economies of scale, originating and servicing these mortgages would be highly profitable at these spreads.

[12] Servicers who fail to maintain these quality standards would lose their servicing rights to all mortgages originated under this plan.

[13] One exception might be consumers who live in locations where local governments charge a percentage of the mortgage amount to refinance a property. In this case, consumers might pay slightly higher rates.

[14] These securities do not include mortgages in pools not in our data or held by the GSEs or Ginnie Mae either because they have not been securitized or they were repurchased from securitizations due to actual or likely default. The data cover 2.73 trillion of outstanding 30-year FRMs and 0.59 trillion of 15-year FRMs and were obtained from Knowledge Decision Sciences.

closing costs. We assume that more recent borrowers will be relatively easy to contact, whereas we may only be able to reach 70-80% of borrowers in older vintages. We further link participation rates to potential borrower savings, with increased monthly payment reductions leading to higher take-up rates. These simulations thus look more like what a normal refinancing wave would look like rather than assuming 100 percent participation.

e) Based on these computations, we expect mortgage payments to fall by about $36 billion, benefitting about 14 million borrowers (about $2,600 average savings).[15] About $2.09 trillion of mortgages would be refinanced. This effect is a big part of how monetary policy would normally work in this setting. If we scale up the number of borrowers and savings based on missing mortgages from GSE pools who do not participate and also FHA and VA mortgages, the estimated number of borrowers helped would be more than 30 million and savings could be up to $75 to $80 billion.[16]

f) This plan would function like a long-lasting tax cut for these 14 million American families. A recent posting on the Liberty Street Blog of the Federal Reserve Bank of New York by economists Joseph Tracy and Joshua Wright argues that the payment reductions are not simply a zero sum game where the stimulus impact of borrower payment reductions is not just offset by lower income to bondholders.[17] For example, more than 47 percent of bonds are owned overseas or by government entities, whose U.S. spending will not decrease substantially with lower bond payments.

g) Empirical evidence suggests that consumers spend a larger portion of permanent increases in income than temporary increases. This increase is accomplished while the plan reduces the deficit modestly by improving the budget position of the GSEs (see below).

h) This program would disproportionately benefit the most disadvantaged borrowers who have been seriously harmed by the recession. These consumers have been unable to take advantage of refinancing opportunities (and most likely to increase consumption as a result of lower mortgage

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[15] A small portion of these savings come from amortizing existing mortgages over a longer period of time. That is, borrowers with 27 years left on their mortgage will now be spreading payments over 30 years for a new FRM. Given that many households face liquidity constraints, offering the option of an extended amortization period is likely an additional benefit. Our borrower take-up rates reflect that refinancing is more appealing to borrowers when the benefit is not largely driven by an increased amortization schedule.

[16] Since many of the mortgages missing from our sample are previously defaulted loans that are repurchased by the GSEs and would thus be ineligible for our program, we think that a much smaller percentage of the up to ***$1.5 trillion*** of missing GSE mortgages would likely take advantage of our program. In earlier analyses we computed the effects of a similar program that also benefited FHA and VA borrowers. We are not counting the loans held in whole loan form in bank portfolios nor are we counting the performing loans in Private Label Securitizations (PLS) as neither group currently benefits from an agency guarantee. In the interests of fairness to these homeowners, a similar program with higher fees could be pursued.

[17] See http://libertystreeteconomics.newyorkfed.org/2012/01/why-mortgage-refinancing-is-not-a-zero-sum-game.html

payments). About 48 percent of all outstanding balances of GSE loans as of June 2011 went to borrowers whose origination mortgage was under $200,000. Because these borrowers have been less likely to refinance, they would obtain 54 percent of the total interest savings. Assuming mortgages are about three times income, this means most of the savings would accrue to borrowers whose household income at origination was under $70,000. (See Appendix Table 2).

i) The housing market benefits in many ways. Lower mortgage payments reduce future defaults, helping to stabilize house prices for all homeowners, whether or not they have a GSE mortgage. The good news about refinancing may help improve consumer confidence, further benefiting the housing market. House prices may start to go up, leaving fewer borrowers underwater, starting a virtuous circle. Finally, reducing pressure on servicers and PMI companies may help the mortgage market start to recover to a more normal level, helping spreads on newly originated mortgages.

5) Profits for other participants

a) <u>GSEs receive cash flow that has an up-front value of $12-$16 billion</u>
   i) They earn 0.6-0.8 percent profit for originating new mortgages; with total refinancings of $2.1 trillion, this amount translates to a profit of $12 to $16 billion.
   ii) GSEs have about $510 billion of their own bonds on their balance sheet.[18] Assuming a weighted average market price of 107, the bonds have a mark-to-market premium of $35.7 billion. Even after these mark-to-market costs, the GSEs should earn appreciable profits, which can be used to cover costs of refinancings, possible future losses, and eventually returning some of the estimated $150 billion owed to taxpayers.
   iii) GSEs have lower costs of future defaults due to lower payments for current borrowers. Reduced defaults might be about $50 billion; we are working further on this estimate.
   iv) GSEs lose right to "put back" legacy mortgages to servicers in the event of a future default due to a "reps and warranties" violation. However, because we limit the program to borrowers who are current on their mortgage, the potential market value of these "put back" rights is likely quite low.

b) <u>Existing servicers (two-thirds of mortgages are serviced by largest banks) benefit by lower legal liabilities and safer portfolios of second liens; must now meet new service-quality standards.</u>
   i) Banks get rid of reps-and-warrants liability for the bulk of outstanding mortgages, helping to resolve legal uncertainty weighing down their share prices and legal reserves.

[18] See Fannie Mae and Freddie Mac monthly summaries available on each Agency's website

ii) Lower payments on first mortgages make the existing portfolio of HELOCs and second liens less risky, helping to shore up bank balance sheets.
iii) In return, banks must agree to re-subordinate existing second liens to newly refinanced mortgages at no cost to existing homeowners.
iv) The banks have about $1.25 trillion of agency MBS in their portfolio, so they will see some prepayments as well.[19]
    (1) Banks typically hold portfolios with lower coupon bonds that would have smaller-than-average mark-to-market losses. When capital-constrained banks have higher coupon bonds trading at a premium, they often liquidate the bonds to book profits and increase capital, replacing them with lower coupon bonds.
    (2) Most of banks' mortgage loans are categorized as "held to maturity" assets and thus are marked at amortized cost. Their holdings in Agency MBS typically are categorized as "available for sale," so the change in mark-to-market values is not reported on the income statement but does change the equity capital account. Thus a large prepayment wave will not result in large mark-to-market losses.
v) Servicers must conform to new independently verified customer service guarantees or lose the mortgage servicing relationship to a competitor.
vi) Existing servicers should have a short period of time (60 or 90 days) to offer this program to their existing borrowers on an exclusive basis. Afterwards, any servicer should be able to approach GSE borrowers to offer this program.

c) <u>Taxpayers benefit: they will receive higher payments from Fannie and Freddie and lower future losses from mortgage defaults; lower mortgage interest deductions may also reduce the deficit.</u>
    i) GSEs must pay back taxpayers for their losses to the extent possible, so profits from managing this program translate to a lower deficit
    ii) Lower homeowner mortgage payments reduce deductions from mortgage interest, raising net tax collections and further lowering the deficit.

d) <u>Bondholders are paying the bulk of the cost of this program</u>
    i) Bondholders benefit from the improved economic outlook associated with this refinancing program.
    ii) Nearly all the gains to mortgage borrowers from this plan come at the expense of investors who understood and accepted the callable nature of mortgage interest rate risk. Appendix Table 3 lists the major groups of bondholders for GSE MBS as of December, 2010. About two-thirds of GSE bonds are held by the private sector or foreign owners.
    iii) Given historical experience, GSE bondholders purchased the bonds at prices that anticipated these bonds being refinanced when mortgage rates fell. Thus, most Agency bondholders have received an unanticipated

[19] See Federal Reserve H.8 release.

windfall from the extremely slow refinancing rates, effectively benefitting from unanticipated inefficiencies in the mortgage market at the expense of existing homeowners. This shift has occurred for almost three years, benefiting the holders of GSE bonds.

- iv) Some GSE bonds are held overseas, where there are no costs to the US economy from increased prepayments.
- v) Agency bondholders have also benefitted enormously from government actions during the crisis. In 2008, the government guaranteed GSE bonds against losses. Later the Federal Reserve bought $1.25 trillion of Agency MBS and the Treasury bought $225 billion. Together, the two still held about $864 billion of Agency MBS as of January 2012. Absent these purchases, Agency MBS prices would be significantly lower, and the attendant losses from a streamlined refinancing wave would also be lower.
- vi) The Federal Government owns GSE bonds through the Federal Reserve and US Treasury and thus will suffer some economic loss from their portfolio from the prepayment of high-coupon Agency MBS. But, the Federal Reserve does not mark-to-market and bought the GSE MBS for the express purpose of lowering mortgage rates and stimulating the housing market, which is what this plan accomplishes.

e) <u>Private Mortgage Insurers</u>

- i) The Agencies should ask Mortgage Insurers (MIs) to re-endorse existing policies for the newly refinanced mortgages.
- ii) With lower mortgage rates, default rates would be lower, so MIs would get large benefits from this plan.
- iii) Mortgage Insurers lose the possibility of pursuing reps and warranties violations on mortgages and may require some additional compensation, which might cost no more than 7 basis points, if needed at all.

f) <u>Title Insurers</u>

- i) New title insurance policies under this program should require minimal additional work, but simply insuring against any adverse claims prior to the origination of the previous mortgage.
- ii) A modified title insurance policy should be available for several hundred dollars at the most. With 14 million new mortgages, this policy would generate substantial new revenue for title insurers for little new effort.

6) Other important questions and responses:

a) <u>Wouldn't a mass refinancing program interfere with markets in a way that might cause a loss in confidence by investors and future mortgage rates to rise?</u>

- i) As we note above, the government and the Fed have already undertaken unprecedented interventions, but most of these have positively impacted Agency bondholders, not so much homeowners. These interventions did not have the intended consequence of assisting homeowners in exercising their contractual right to refinance when interest rates fell.

ii) Historically, most bond prices already incorporated the anticipation of widespread refinancing when mortgage rates fell, just as in 2002-2004, when the majority of outstanding mortgages refinanced to take advantage of mortgage rates that fell below 5 percent.

iii) Nonetheless, if this issue were a continuing concern, the Agencies could add an additional covenant in future MBS guaranteeing that the Agencies would never again pursue a mass refinancing program (or limiting the scope of such a program). Such a provision would be a legally binding contract and require compensation for bondholders in any future mass refinancing program.

iv) This streamlined refinancing proposal is meant to reduce or eliminate frictions that have limited households' ability to exercise their contractual right to refinance when interest rates fell.

b) <u>Restrictions on securitizing new mortgages with an LTV over 125 percent can change the type of securitization required, but such mortgages can be included in our program.</u>

i) High LTV mortgages (greater than 125% LTV) cannot be placed into REMICs based on current IRS tax rules. One of the requirements for an agency MBS is that it be REMIC eligible. Thus, 125+ LTV loans are ineligible to be securitized into TBA MBS. However, these mortgages can still be securitized through non-TBA deliverable, single-class pass-thru securities and will trade at a lower price in the market. While these single-class securities cannot be tranched like REMICs can, the GSEs have issued such securities in the past and could do so again under this program. We believe that automated appraisals can be used to determine LTVs for the decision of which mortgages to place in normal or high LTV pools.

ii) Securities backed by high LTV mortgages present trade-offs to investors. On one hand, high LTV, low FICO, low loan balance mortgage loans are much less likely to efficiently exercise their option to prepay, which significantly increases their value. On the other hand, if such MBS contain >125 LTV loans, they will be ineligible for use in REMIC structures. We believe that such high LTV, low loan balance MBS will improve the TBA market and be material to this program, especially given that mortgages above 125% LTV are a minority of all outstanding mortgages

iii) TBA rules are negotiated rather than legislated or subject to SEC regulation. We believe that SIFMA retains broad discretion to allow the placement of high LTV mortgages into bonds. The intent of the TBA deliverability requirement is to preserve and improve liquidity. There is no requirement that such bonds be relatively homogeneous, as the expectation is that TBA means "cheapest to deliver." Historically, TBA good delivery requirements are negotiated, with SIFMA acting as the honest broker to ensure an orderly operation the MBS market.

iv) Current trading data and option adjusted spread models (OAS) show that high LTV/low credit score/low loan balance mortgage pools trade at premiums to TBA eligible pools. While seemingly counterintuitive, pools with relatively risky borrowers are attractive to many investors because of their relatively slow prepayment speeds.

c) <u>Wouldn't a mass refinancing program lock homeowners into their homes, impairing labor market mobility, home sales, and future economic growth?</u>
   i) Any time interest rates rise, homeowners have a reduced incentive to move. Of course, the larger issue is that underwater borrowers already have reduced ability to move which is reducing labor mobility and increasing unemployment.
   ii) Under this plan, the United States should mimic the Danish mortgage system and give mortgage borrowers the right to purchase their mortgages out of these pools at market prices. Under such a plan, performing borrowers, through their servicer, broker, banker, or other financial intermediary, could purchase bonds at market prices. The bonds would be presented to the trustee which would accept its' liability and thus allow borrowers to pay off their mortgages. Because these bonds would trade at a discount to par value when rates rise, borrowers would earn a "profit" by paying off their mortgage below par. In fact, if rates rose, borrowers might be able to use such profits to help offset the impact of lower house prices, effectively stabilizing the mortgage market and the economy.[20]

d) <u>Aren't the originators getting "too much" by eliminating reps and warranties liability on future mortgages?</u>
   i) Reps and warrants claims on mortgages that are current on their payments are likely to be worth relatively little.
   ii) Servicers believe that the current exercise of reps and warranties is far in excess of the intent of the original contract clause. In fact, they believe loans are being putback for small clerical errors.
   iii) If this issue is a continuing concern, the Agencies could demand that issuers carry over any some limited liability to the newly issued mortgages. Previous originators would still benefit in that consumers with lower payments are less likely to default, thus reducing potential liability.

e) <u>The program is "unfair," in that it does not cover all borrowers</u>
   i) It is not possible to help borrowers whose loans are not currently guaranteed by the GSEs, FHA, or VA without appreciable taxpayer funds or increased risk in lending. However, our proposal could be extended to these FHA and VA loans, which are already explicitly backed by the U.S. government.
   ii) To help remaining borrowers, the government should work to further reduce retail mortgage rates and develop a privately funded mortgage market.

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[20] For more detail, see the following presentation: http://absalonproject.com/wp-content/uploads/2011/08Time-to-Fix-the-US-Mortgage-Market-8-22-11.pdf.pdf

iii) This program could be extended to include borrowers whose loans fit the GSE conventional loan guidelines at the time of origination, but for some reason were not pooled with a GSE guarantee. This would need to be done at higher cost to the borrower, as the GSEs would be taking on incremental risk.

iv) In addition, the government should endeavor to cover some HARP borrowers who agreed not to refinance again as part of their HARP mortgage. Such restrictions did not envision a low-cost mass refinancing program being undertaken at lower mortgage rates.

Appendix Table 1: <u>Distribution of Mortgage Rates and Origination Year for Outstanding Government-Backed Mortgages as of June, 2011</u>

(NOTE: McDash is missing about 10 million mortgages or 20 percent of outstanding mortgages, so these counts likely understate the number of potential beneficiaries)

	Percent of Borrowers with 30-yr FRM		
	GSE	**FHA**	**VA**
Below 4%	2.4%	0.4%	0.3%
4-5%	21.4%	23.1%	29.6%
5-5.49%	16.9%	28.2%	24.0%
5.5-5.99%	21.7%	17.9%	17.5%
6-7%	29.8%	22.3%	20.1%
above 7%	8.0%	8.2%	8.6%
Total number in McDash	15,555,981	5,488,159	1,125,248

	Percent of Borrowers with 30-yr FRM		
Date of origination	**GSE**	**FHA**	**VA**
2007 or earlier	57.7%	30.5%	38.9%
2008-2009	26.0%	40.9%	29.0%
2010-2011	16.4%	28.6%	32.1%

	Percent of Borrowers with 15-yr FRM		
	GSE	**FHA**	**VA**
Below 4%	6.9%	3.7%	1.8%
4-5%	38.6%	43.6%	31.6%
5-5.49%	21.0%	15.1%	20.9%
5.5-5.99%	17.7%	14.1%	24.3%
6-7%	13.3%	15.8%	16.5%
above 7%	2.6%	7.9%	5.0%
Total number in McDash	6,187,831	342,577	96,989

Date of origination	Percent of Borrowers with 15-yr FRM GSE	FHA	VA
2007 or earlier	62.1%	37.8%	67.4%
2008-2009	14.7%	27.7%	10.6%
2010-2011	23.2%	34.5%	22.1%

Appendix Table 2: Distribution of Benefits Origination Balances as of June, 2011

Origination Balance	% Outstanding Balances	% Interest Savings
Under $100,000	14%	18%
$100,000-199,999	33%	36%
$200,000-299,999	27%	25%
$300,000-399,999	17%	15%
$400,000-499,999	6%	4%
$500,000-599,999	2%	1%
$600,000-699,999	1%	1%

Source: Lender Processing Services and authors' calculations

Notes**: % Outstanding Balances** represents the portion of total outstanding GSE mortgage balances broken down by the origination amount. So 47 percent of all outstanding GSE balances are for borrowers with an origination mortgage under $200,000. **% Interest Savings** represents the portion of the total interest savings that accrue to borrowers in each category. So 54 percent of all interest savings go to borrowers whose origination amount was less than $200,000. The reason that a disproportionate share of the interest savings go to borrowers with the lowest origination balances is that these borrowers also have the highest mortgage rates and were the least likely to refinance to take advantage of low rates.

Appendix Table 3: Ownership of GSE Bonds and Mortgages as of December, 2010

Owner	Dollars Outstanding	Percent
US Treasury/Federal Reserve	$1,148	21.5%
Commercial Banks	$1,071	20.1%
Foreign Investors	$770	14.4%
Mutual Funds/Private Pension Funds	$705	13.2%
Fannie Mae/Freddie Mac	$583	10.9%

Public Pension Funds/State & Local Govt	$280	5.2%
Savings Institutions/Credit Unions	$262	4.9%
Insurance Companies	$208	3.9%
Other	$301	5.6%
Total	$5,328	100%

Source: Inside Mortgage Finance, “The 2011 Mortgage Market Statistical Annual – Volume II,” P. 293.