

**Freddie Mac and Fannie Mae:
Their Funding Advantage and Benefits to Consumers**

by

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Executive Summary

The benefits that American consumers derive from the activities of Freddie Mac and Fannie Mae and the advantages these private corporations receive from their federal charters are central issues in the public discussion of their role in the housing finance system. At the request of Freddie Mac, we independently analyzed a 1996 report that the Congressional Budget Office prepared on this subject (the “1996 Study”) and then addressed the benefits to consumers and to the corporations.

- ❖ We first find that the 1996 Study both understated the consumer benefits and overstated the firms’ advantage in borrowing funds (the “funding advantage”). The study used faulty data and inappropriate methodology.
- ❖ We estimate that Freddie Mac and Fannie Mae generate interest-cost savings for American consumers ranging from at least \$8.4 billion to \$23.5 billion per year. In contrast, we estimate that the value Freddie Mac and Fannie Mae indirectly receive from federal sponsorship in the form of their funding advantage ranges from \$2.3 billion to \$7.0 billion annually. Thus, even using the lowest estimate of consumer benefits and the highest estimate of the funding advantage in our range of estimates, the value of consumer interest-cost savings resulting from Freddie Mac and Fannie Mae’s activities significantly exceeds the value of their funding advantage.
 - Freddie Mac and Fannie Mae also provide benefits beyond those that can be quantified in terms of savings on mortgage interest expense by homeowners. These include the maintenance of liquidity in the mortgage market during periods of financial turbulence and the expansion of homeownership opportunities for low-income and minority families. No attempt to quantify these additional consumer benefits was made here.
- ❖ We also find that federal sponsorship of Freddie Mac and Fannie Mae provides a “second best” structure for a housing finance system assuming that the “first best” system would have no government involvement at all. This is because Freddie Mac and Fannie Mae supply

housing finance more efficiently than could the depositories alone. Banks and thrifts receive federal support in the form of deposit insurance, access to Federal Reserve Bank liquidity, and Federal Home Loan Bank advances and as a result they have an average cost of funds lower than Freddie Mac and Fannie Mae.

In summary, the 1996 Study was deficient in many respects. A more accurate approach shows that, under current federal sponsorship of Freddie Mac and Fannie Mae, consumers receive benefits significantly greater than the funding advantage received by the two corporations.

I. Introduction

Congressman Richard Baker (R-LA), Chairman of the Subcommittee on Capital Markets, Securities and Government Sponsored Enterprises of the Committee on Banking and Financial Services of the U.S. House of Representatives, has requested that the Congressional Budget Office (“CBO”) update its 1996 estimates on the funding advantage and benefits to families resulting from Freddie Mac and Fannie Mae’s activities (the “1996 Study”).¹ The 1996 Study attempted to quantify the advantages that Freddie Mac and Fannie Mae derive from their Congressional charters and the benefits Freddie Mac and Fannie Mae provide to consumers. The Department of the Treasury, the Department of Housing and Urban Development, and the General Accounting Office prepared similar studies.²

Freddie Mac and Fannie Mae are government-sponsored enterprises (“GSEs”) that play an important role in the secondary market for residential mortgages. Operating under essentially identical federal charters, the two firms benefit from lower costs and larger scale than they would have in the absence of federal sponsorship. Freddie Mac and Fannie Mae use these advantages to reduce the cost of mortgage credit and provide other benefits to homeowners. The lower yields they pay on their securities are often characterized as a “funding advantage” or even as a “subsidy” when comparing Freddie Mac and Fannie Mae to purely private corporations that have no nexus to the government. The 1996 Study attempted to quantify the funding advantage resulting from federal sponsorship and the benefits conveyed to mortgage borrowers.

The 1996 Study generated substantial controversy. It was well received by those who support a change in the charters of Freddie Mac and Fannie Mae. Others observed that the analysis contained serious flaws that led to an understatement of the net benefits provided by the

¹ Letter dated July 12, 2000 from Representative Richard H. Baker to Mr. Dan L. Crippen, Director, Congressional Budget Office, requesting updates of estimates contained in Congressional Budget Office (1996).

² Department of the Treasury (1996); Department of Housing and Urban Development (1996); and General Accounting Office (1996).

two housing enterprises. In anticipation of the forthcoming CBO report, we were asked by Freddie Mac to review the 1996 Study and provide current analyses.

In this report, we address these fundamental questions:

- Are there major errors in the 1996 Study, and, if so, what are they?
- What are reasonable values for the funding advantage that Freddie Mac and Fannie Mae receive and the benefits that Freddie Mac and Fannie Mae's activities provide consumers?
- Would consumers be better or worse off in the absence of federal sponsorship of Freddie Mac and Fannie Mae?

These questions are answered in the following sections. Section II addresses errors in the data and methodology used in the 1996 Study. That study was deficient in many respects. We find that it systematically overstated the funding advantage received by Freddie Mac and Fannie Mae and understated the benefits to consumers. A repeat of these mis-measurements in the new report would render its findings and conclusions without credible foundation. Section III quantifies the funding advantage realized by Freddie Mac and Fannie Mae through their charter relationship with the federal government. Section IV addresses the benefits provided to consumers by the activities of Freddie Mac and Fannie Mae. We find that the benefits are much greater than the funding advantage. Section V includes an analysis of the market for mortgage credit and identifies certain efficiency-enhancing effects that follow from Freddie Mac and Fannie Mae's charters. We find that federal sponsorship of Freddie Mac and Fannie Mae supplies housing finance more efficiently than would depositories alone. The final section contains concluding remarks.

We find that the funding advantages and benefits must be expressed as ranges of estimates rather than as particular values. This follows from the underlying changes in market conditions over time and from the inability to obtain precise estimates of key relationships. Our fundamental conclusion is unqualified, however. Under present institutional arrangements in the mortgage lending industry, it would be a mistake to withdraw or curtail federal sponsorship of Freddie Mac and Fannie Mae. Because of Freddie Mac and Fannie Mae, consumers enjoy

savings on their mortgages that are substantially greater than the funding advantages that are derived from Freddie Mac and Fannie Mae's charters.

II. The Approach Used by CBO in 1996 Overstated the Funding Advantage and Understated Benefits to Consumers

The CBO used a simple framework to quantify the funding advantage and the benefits to consumers. The first step in deriving the funding advantage was estimation of spreads that measure the differences in yields on Freddie Mac and Fannie Mae securities and similar securities issued by fully private firms. The second step was multiplying those spreads by the outstanding balances of Freddie Mac and Fannie Mae securities. A parallel procedure was used to derive the benefits to consumers. A spread estimating the effect of Freddie Mac and Fannie Mae on mortgage interest rates was applied to the outstanding amount of conforming mortgages held by Freddie Mac and Fannie Mae. In applying this framework in 1996, CBO overstated the funding advantage and understated the benefit to consumers.

The 1996 CBO estimate of the funding advantage was overstated in that:

1. It treated all Freddie Mac and Fannie Mae debt as long-term debt, ignoring the lower funding advantage on short-term debt.
2. It incorrectly measured the funding advantage on long-term debt and mortgage-backed securities ("MBS");

The 1996 CBO estimate of the consumer benefits was understated in that:

1. It ignored the benefits of Freddie Mac and Fannie Mae's activities on conforming mortgages not purchased by them;
2. It failed to recognize that the unadjusted spread between rates on jumbo and conforming mortgages does not capture the full impact of Freddie Mac and Fannie Mae on mortgage rates.

Overstating the Funding Advantage

Freddie Mac and Fannie Mae issue four types of securities to fund their purchases of mortgages: short-term debt (with maturities less than one year); long-term bullet debt; long-term callable debt (which can be called or retired early); and MBS. CBO overstated the funding advantage for Freddie Mac and Fannie Mae for each of these securities. First, the funding advantage on long-term debt was used for short-term debt even though empirical evidence demonstrates that short-term debt receives a lower funding advantage. Second, CBO failed to adjust its estimates of the funding advantage on long-term debt to account for the better liquidity of GSE debt. Third, the funding advantage on long-term callable debt was mis-measured, resulting in a significant overstatement of the funding advantage on this debt. Fourth, CBO overstated the funding advantage for MBS.

Overstatement of the funding advantage on short-term debt

The distinction between long-term and short-term debt is significant. The range of estimates for the funding advantage on short-term debt is substantially lower than for long-term debt. As we discuss further in the next section, the estimated funding advantage for short-term debt ranges from 10 to 20 basis points, while the corresponding range for long-term debt is 10 to 40 basis points.³ At the same time, the share of short-term debt is large. The proportion of debt outstanding at year-end 1995 that was due within a year was about 50% for both Freddie Mac and Fannie Mae. At the end of third quarter 2000, the proportions were 41% for Fannie Mae and 45% for Freddie Mac.⁴ This difference in the term of debt, and its implication for estimating the funding advantage, were ignored by CBO in its 1996 report. The appropriate approach is to compute separate funding advantages for short-term and long-term debt.

³ Freddie Mac's and Fannie Mae's practice of synthetically extending the maturity of debt with swaps and other derivatives does not matter for the assessment of the short-term funding advantage. They participate in the swap market at the same prices as other large financial institutions. Thus, the funding advantage on short-term debt whose maturity is extended is no higher than the funding advantage for short-term debt whose maturity is not extended.

⁴ These figures were obtained from the 1996 annual reports and third quarter, 2000 investor-analyst reports of Freddie Mac and Fannie Mae.

Measuring spreads on long-term debt

Analysts estimate the Freddie Mac and Fannie Mae funding advantage in debt issuance by comparing yields on debt issued by Freddie Mac and Fannie Mae and debt issued by firms that lack federal sponsorship but are perceived as otherwise similar to Freddie Mac and Fannie Mae. Such comparisons are sensitive to the choice of firms judged to be similar to Freddie Mac and Fannie Mae, to the period under consideration, and to how similar other private securities are to Freddie Mac and Fannie Mae securities with respect to such technical characteristics as default risk, callability, time-to-maturity, and amount issued. No such comparison is perfect. There are always some differences between the Freddie Mac and Fannie Mae securities and the comparators.

For its 1996 report, CBO utilized spreads from a commissioned study by Ambrose and Warga (1996). The authors were careful to limit their comparison of Freddie Mac and Fannie Mae securities to private securities that were similar in a number of important respects. However, they did not take into account the higher liquidity of Freddie Mac and Fannie Mae debt that results from the scale of their security issuances and the consistency of their presence in the securities markets. Withdrawal of federal sponsorship might reduce the amount of debt they issue, but they would still likely be among the largest private issuers in the market. Large issues generally are more readily marketable and therefore carry lower yields. Thus, yield comparisons that do not take issue size, volume outstanding, and other determinants of liquidity into account will overstate the yield spreads.⁵

⁵ The Ambrose and Warga study has other methodological deficiencies that were revealed by academic reviewers at the time the study was prepared (see, for example, Cook (1996) and Shilling (1996)). The spreads reported are averages obtained from monthly data. The sample of comparable debt issues varies widely over the ten-year period studied, but the authors report very limited information on how the levels and dispersion in the distribution of spreads varies over time. This may be a concern because months in which the number of possible comparisons is small receive as much weight in arriving at the final averages as months with large numbers of possible comparisons. Because the margin of error is higher in the months with few comparisons, those months should

Misuse of spreads on callable debt

The 1996 CBO procedure uses a weighted average of the spreads on callable and bullet debt to derive its estimate of the funding advantage. Because the spread on callable debt used by CBO was extraordinarily high (more than twice the spread on bullet debt), this approach resulted in an average spread on long-term debt that was considerably higher than would have been obtained from spreads on bullet debt alone.

Callable debt generally has an initial period where the debt cannot be called, after which it may be called, or bought back by the issuer at a stated price before maturity. It is far more difficult to compare yields across callable bonds because yields are extremely sensitive to the specific call features of a bond, for example, the length of the initial non-call period, the call price, and the maturity. Further, the projected yield depends on one's forecast of the volatility of interest rates over the investor's holding period of the bond, as volatility effects the probability that interest rates will fall sufficiently to trigger a call.

The difficulty of comparing yields on callable debt is exacerbated by the lack of data on callable bonds by other issuers. Freddie Mac and Fannie Mae issue significant amounts of callable debt because it provides an effective hedge for the mortgage assets that they are funding. Few other corporations have this need and regularly issue callable debt. In 1999, the GSEs accounted for most of the callable debt market.

Incorporating callable spreads into the derivation of the funding advantage on long-term debt was inappropriate. First, the callable spreads are very difficult to measure, as noted above. Second, there is no evidence to indicate that the funding advantage on callable debt is larger than that on non-callable debt. Callable debt is essentially long-term debt with an "option" to turn the debt into short-term debt. Market prices for callable debt reflect the value of the bullet debt plus the value of the call provision. The value of the call provision is determined in the derivatives market where Freddie Mac and Fannie Mae have no advantage over other market participants.

receive less weight in the overall average. Failure to reflect these deficiencies in its application of the Ambrose and Warga data led CBO to treat the funding advantage as being more precisely estimated than it actually was.

Therefore, a more appropriate approach to estimate the funding advantage on callable debt would be to use spreads on long-term debt that can be more accurately measured.

Funding advantage on MBS

CBO included a component for MBS in its estimate of the overall funding advantage. As with the debt component, the funding advantage on MBS was derived from an estimated spread using yields on Freddie Mac and Fannie Mae securities relative to yields on comparable securities issued by other firms. The difficulty with this approach is that “private-label” MBS are very different from Freddie Mac and Fannie Mae MBS. Private-label MBS have lower volume, less frequent issuance, less liquidity and more complex features that investors must analyze. In particular, private-label MBS are typically “structured” securities where the cash flows on the underlying mortgages are divided among various investors. Consequently, estimates of the relevant spreads are very rough approximations. Most are based on the impressions of market participants rather than documented statistical comparisons subject to verification by other researchers. If these estimates were to be used, the estimates would need to be adjusted downward for the much greater liquidity of Freddie Mac and Fannie Mae securities.

After assessing the available information, CBO concluded that the relevant MBS spread was between 25 and 60 basis points. Although this range errs on the high side, we appreciate the recognition, reflected in the broad range, that the spread is not subject to precise estimation. However, the CBO did not carry this cautious approach into the calculation of the funding advantage. The agency used 40 basis points as its baseline value to estimate the MBS component of the funding advantage, and its sensitivity analysis considered a deviation of only 5 basis points from that value.

We believe that the relevant MBS spread is significantly less than 40 basis points and would fall between the spreads on short-term and long-term debt. In part, the basis for this opinion is the recognition that Freddie Mac and Fannie Mae are earning modest rates of return on their MBS business. Annual reports indicate that the two enterprises earn guarantee fees of approximately 20 basis points, which must compensate them for bearing default risk and other costs. Thus, Freddie Mac and Fannie Mae do not appear to be retaining much, if any, funding

advantage through the issuance of MBS. Furthermore, MBS are backed by or “collateralized” by the underlying mortgages. Debt, on the other hand, is uncollateralized. As a result, perception of credit quality plays less of a role in valuing MBS than debt, because the investor has the assurance of quality from the mortgage collateral. Therefore, the funding advantage on MBS would be less than the funding advantage on the long-term debt.

Understating Benefits to Consumers

CBO estimated the benefits to consumers from Freddie Mac and Fannie Mae by multiplying a long-term average of the spread between interest rates on jumbo and conforming fixed-rate mortgages by the volume of mortgages financed by Freddie Mac and Fannie Mae.⁶ This procedure understates the savings to borrowers on two accounts. First, it does not incorporate the effect on *all* conforming mortgage rates of the activities of Freddie Mac and Fannie Mae, including the reduction in rates on the conforming mortgage loans they do not purchase. Second, the jumbo-conforming spread understates the full effect that Freddie Mac and Fannie Mae have on mortgage rates.

The jumbo-conforming spread

Nearly all observers agree that Freddie Mac and Fannie Mae reduce interest rates on all conforming mortgage loans. The most dramatic evidence of this fact is found in comparisons of interest rates for loans above and below the conforming loan limit.⁷ These rate comparisons can be found listed in newspapers around the country.

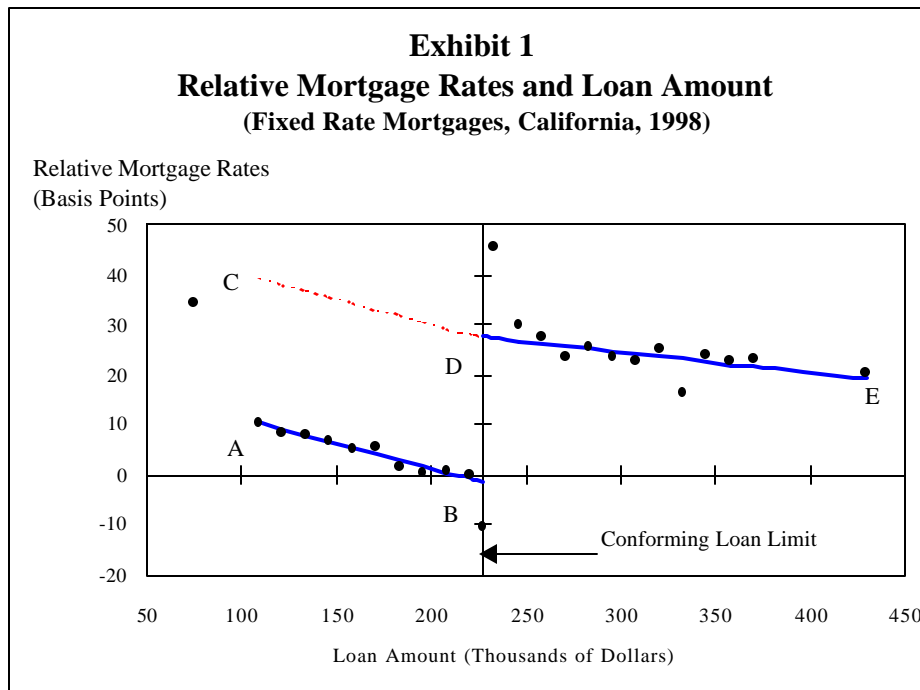
Freddie Mac and Fannie Mae are not allowed to purchase loans for amounts above the conforming limit. The effect this limitation has on interest rates is graphed in Exhibit 1. In this chart, the average interest rates in a range of loan size categories are shown relative to average interest rates for the category just below the conforming loan limit (which in 1998 was

⁶ In practice, the amount financed is measured as the (annual average) balance outstanding of mortgages in portfolio or pooled into MBS.

⁷ The 2001 conforming loan limit is \$275,000 for one-family properties. Higher limits apply in Alaska, Hawaii, Guam and the U.S. Virgin Islands.

\$240,000).⁸ The graph shows that mortgage interest rates decline steadily with loan size until the conforming limit is reached. Then rates take a sharp jump upward before resuming their decline. This relationship is consistent with the proposition that net economic costs of originating and servicing decline with loan size.⁹

The gap between the dotted line, CD, and the solid line AB, is the direct measure of the jumbo-conforming spread.

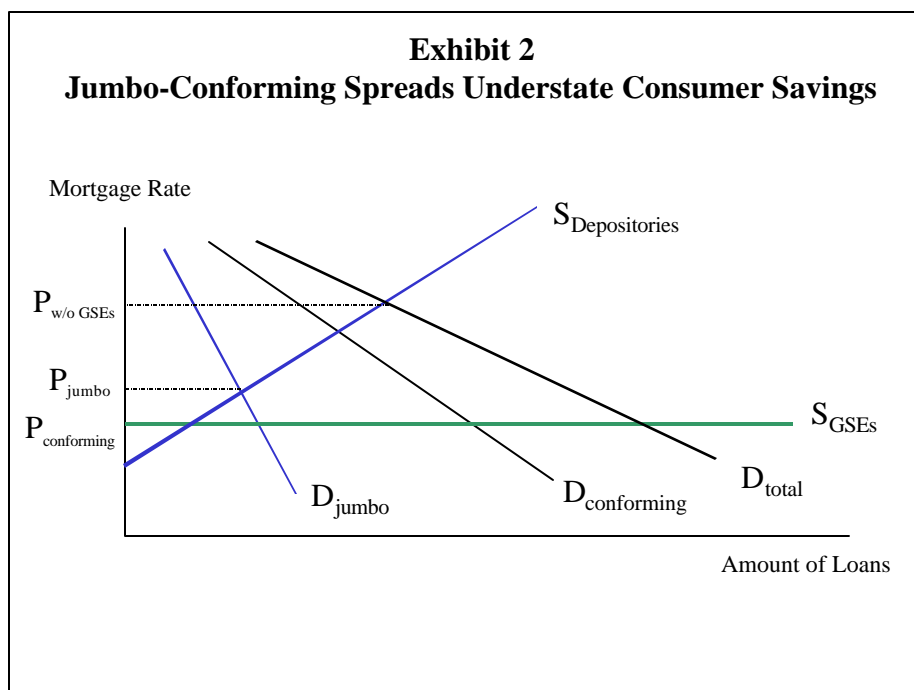


⁸ The exhibit plots relative mortgage interest rates for fixed-rate loans in the Monthly Interest Rate Survey (“MIRS”) after adjusting for origination week, lender type, new versus existing home, and loan-to-value intervals. The points plotted are averages computed over intervals with width of \$12,500. Exceptions are the endpoints and the average for loans made for exactly \$240,000. Readily obtainable mortgage rates found in newspapers make none of these adjustments.

⁹ This phenomenon underlies empirical specifications that have been used in previous research on the conforming loan limit. See Cotterman and Pearce (1996) and Hendershott and Shilling (1989). The reasons for the inverse relationship between loan size and net economic costs include significant fixed costs of origination, servicing and real-estate-owned disposition that cause average costs per loan dollar to decline dramatically with loan size. These

Freddie Mac and Fannie Mae reduce rates on jumbo loans as well as on conforming loans

CBO used the average jumbo-conforming spread estimated over the 1989-1993 interval as its measure of the effect of Freddie Mac and Fannie Mae on mortgage interest rates. This approach assumes that the line CDE in Exhibit 1 represents the relationship between mortgage rates and loan size that would be observed in the absence of Freddie Mac and Fannie Mae. As we show below, this assumption understates consumer benefits because Freddie Mac and Fannie Mae almost certainly reduce interest rates on jumbo loans as well as on conforming loans.

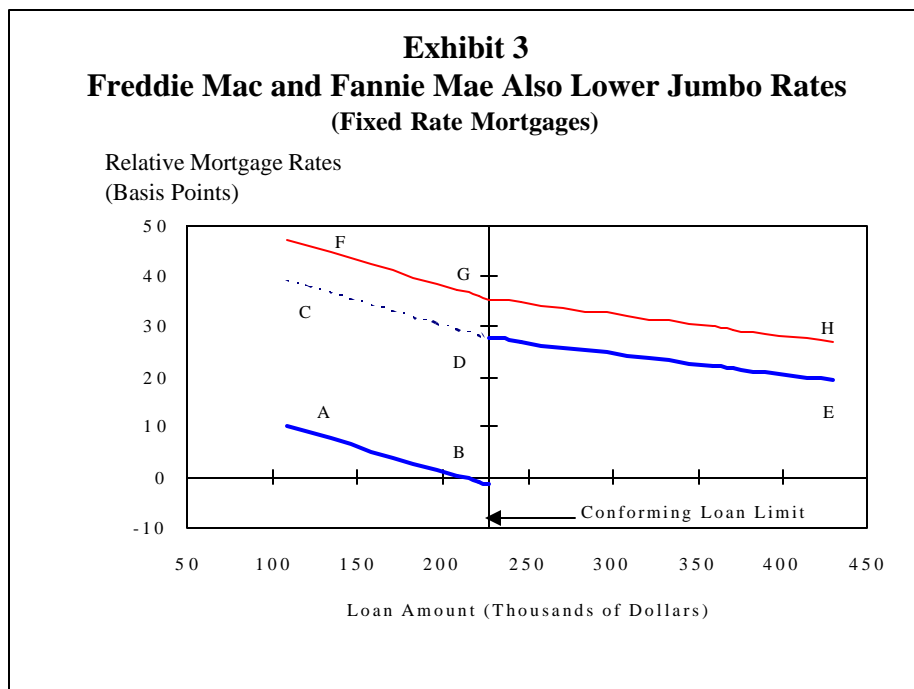


A theoretical argument for this point is illustrated in Exhibit 2. In this graph, the mortgage interest rate in the absence of Freddie Mac and Fannie Mae is found at the intersection of the depository supply curve ($S_{\text{Depositories}}$) and the total mortgage demand curve (D_{total}). When supply from Freddie Mac and Fannie Mae is introduced, there emerge two mortgage rates, both

factors more than offset a slightly more expensive prepayment option for jumbos and some evidence that default rates are higher for very-low-balance and for super-jumbo loans.

lower than the rate that would prevail in their absence. The rate for jumbo loans is determined by the intersection of the depository supply curve and the demand curve for jumbo loans (P_{jumbo}). The rate for conforming loans is determined by the intersection of the GSEs supply curve and the demand curve for conforming loans ($P_{\text{conforming}}$). Thus, the presence of Freddie Mac and Fannie Mae reduces rates on both jumbo and conforming loans, and the jumbo-conforming differential understates the savings to mortgage borrowers.

This reasoning suggests that mortgage rates in the absence of Freddie Mac and Fannie Mae would lie on line FGH in Exhibit 3 rather than line CDE. The jumbo-conforming spread would understate the effect of Freddie Mac and Fannie Mae on mortgage rates by the distance between segments CD and FG.



Partial versus full benefits to borrowers

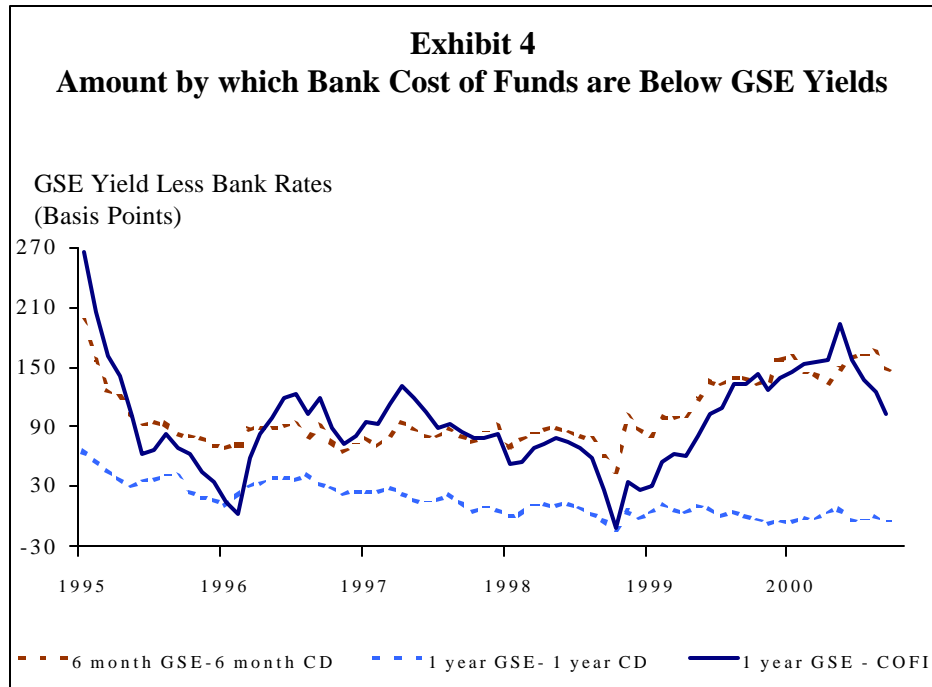
This analysis does not take into account the fact that Freddie Mac and Fannie Mae are restricted to a market that has other federally-subsidized participants. Depositories have been, and continue to be, substantial holders of residential mortgages. They have access to insured deposits, which carry explicit federal guarantees, and low-cost advances from the Federal Home

Loan Banks (“FHLBs”) — institutions with federal sponsorship similar to that of Freddie Mac and Fannie Mae.

Consequently, Freddie Mac and Fannie Mae compete with other subsidized participants. Thus, the estimates of the spreads on securities are not strictly comparable with the estimates of the interest rate effect. The security spreads are estimated on a *gross* basis, while the effect on mortgage interest rates is *net* of the effect of depositories. The amount by which depositories reduce interest rates on jumbo loans would have to be added to the effect indicated in Exhibit 3 to obtain the total effect of Freddie Mac and Fannie Mae on conforming mortgage rates.

The point that depositories also receive a funding advantage relative to firms without access to any federally supported sources of funds is illustrated in Exhibit 4.¹⁰ The chart shows that the 11th District Cost of Funds Index (“COFI”), which reflects the cost of funds for western savings associations, is below the yield on comparable Freddie Mac and Fannie Mae debt. Similarly, the spreads to certificates-of-deposit (“CD”) yields show that banks have lower cost of funds.

¹⁰ The yield spreads are 6-month GSE debt less the 6-month CD yield, one-year GSE debt less the one-year CD yield, and one-year GSE debt less the 11th FHLB district COFI.



An issue deserving further research is the extent to which the funding advantage accruing to banks benefits consumers. Exhibit 5 demonstrates that, unlike Freddie Mac and Fannie Mae, the depositories provide substantial support to the jumbo market.¹¹ As well, relative to Freddie Mac and Fannie Mae, these depositories, the largest FHLB advance holders, have a lower share of net mortgage acquisitions (originations plus purchased loans, less loans sold) in the low- and moderate-income market. In the Home Mortgage Disclosure Act (“HMDA”) data, 93 percent of all jumbo loans for which income is reported are made to borrowers with incomes above 120 percent of the area median. From the data presented in Exhibit 5, one can infer that approximately one-half of FHLB advances are being used to fund jumbo mortgage loans, loans

¹¹ Source: FHLB System 1999 Financial Report, Thrift Financial Reports, 1999, Home Mortgage Disclosure Act data, 1999. FHLB advances for the top 10 advance holding members are from page 17 of the Federal Home Loan Bank System 1999 Financial Report. FHLB advances for Commercial Federal Bank, Dime Savings Bank, and Standard Federal Bank are from their respective Thrift Financial Report filings line item SC720 (Advances from FHLB). Low- and moderate-income shares are the percent of dollars reported in HMDA going to borrowers with incomes less than the area median income; includes all conventional refinance and home purchase loan originations and purchases for single-family residences, net of loans sold.

made disproportionately to upper-income borrowers. In contrast, despite being given access to low-cost funding from the FHLBs, the top FHLB advance holders extended only 20 percent of their net conventional, single-family mortgage acquisitions (weighted by dollars) to low- and moderate-income borrowers in 1999, according to HMDA. Freddie Mac's 31 percent low-and moderate-income share (dollar-weighted) is higher than every one of the top FHLB advance holders.

Exhibit 5			
Federal Home Loan Bank Advances and Shares of Net Mortgage Acquisitions (1999)			
Institution	FHLB Advances December 31, 1999 (Millions of Dollars)	Low and Moderate- Income Shares (Percentages)	Jumbo Shares (Percentages)
Washington Mutual Bank, FA, Stockton, CA	45,511	14	55
California Federal Bank, San Francisco, CA	23,377	2	75
Washington Mutual Bank, Seattle, WA	11,151	19	41
Sovereign Bank, Wyomissing, PA	10,488	18	44
Charter One Bank, SSB, Cleveland, OH	9,226	22	38
PNC Bank, NA, Pittsburgh, PA	6,651	17	46
Bank United, Houston, TX	6,593	4	68
Norwest Bank, MN	6,100	23	37
World Savings Bank, FSB, Oakland, CA	5,655	18	42
Astoria FS&LA, New York City, NY	5,305	4	77
Commercial Federal Bk, a FSB, Omaha, NE	4,524	27	24
Dime Savings Bank of NY, New York City, NY	4,463	2	58
Standard Federal Bank, Troy MI	4,222	21	30
Top FHLB advance holders (total)	143,265	14	52
Freddie Mac	n.a.	31	0
Fannie Mae	n.a.	29	0

Benefits to consumers in addition to reductions in mortgage rates

Efficiencies in underwriting and increases in low-income and minority homeownership

Freddie Mac and Fannie Mae provide benefits beyond reductions in interest rates on mortgage loans. These benefits include increased availability of information provided to consumers, standardization of the mortgage lending process, and more objective qualifying criteria through the development of automated underwriting. Freddie Mac and Fannie Mae have also increased the availability of low-down-payment mortgages. Such loans make mortgage financing more available to low- and moderate-income families. Recent research indicates that home ownership for these families and minority families are 2% to 3% higher as a result of the

efforts of Freddie Mac and Fannie Mae (Quercia, McCarthy, and Wachter (2000), and Bostic and Surette (2000)).

Improved dynamic efficiency and liquidity

Freddie Mac and Fannie Mae also increase the dynamic efficiency of the mortgage market, a point ignored by CBO. In periods of turbulence in the capital markets, Freddie Mac and Fannie Mae provide a steady source of funds. These conditions occur relatively frequently. Since 1992, the capital markets have had two episodes of abnormal shortages of liquidity—one beginning in late 1994 following the Orange County bankruptcy and another in 1998 and 1999 when important developing countries devalued their currencies and Russia defaulted on some bonds. Recent research indicates that the activities of Freddie Mac and Fannie Mae “... returned capital to the mortgage market. That action not only stabilized the price of mortgage-backed securities, it also stabilized home loan rates during the credit crunch of 1998” (Capital Economics (2000)).

Lower risk to taxpayers

If the roles of Freddie Mac and Fannie Mae were reduced substantially, many presume that withdrawal of federal sponsorship would reduce taxpayer risk in direct proportion to the removal of risk from the books of Freddie Mac and Fannie Mae. This presumption ignores the likely expansion of other federally-sponsored participants that support housing. Yezer (1996) notes that such charter revocation would lead to expansion of the demand for Federal Housing Administration (“FHA”) mortgages. [The analysis of Miller and Capital Economics \(2000\)](#), discussed in Section V (and illustrated in Exhibits 2 and 12) indicates that mortgages held by depositories would also increase. These reallocations of mortgage credit would shift additional risk to the FHA insurance and deposit insurance programs. Additionally, families would bear more interest rate risk because, when faced with higher rates on fixed-rate mortgages, they will increase their use of adjustable-rate mortgages (“ARMs”). On balance, in addition to reallocating resources to less efficient housing finance participants, charter revocation would likely increase risks to taxpayers.

Summary

In summary, CBO's 1996 report was deficient in many respects. The approach used overstated the funding advantage Freddie Mac and Fannie Mae derive from their charters, understated some components of consumer benefits, and ignored others. In addition, the use of point estimates for the various spreads, rather than ranges, provides the misleading impression that the funding advantage and benefits to consumers can be quantified precisely. A repeat of these mis-measurements in the new report would render its findings and conclusions without credible foundation.

We turn next to our own assessment of the advantages afforded Freddie Mac and Fannie Mae through their federal charters, followed by our assessment of the benefits derived by consumers.

III. Estimates of Funding Advantages to Freddie Mac and Fannie Mae

CBO overstated the subsidy involved in debt-funded mortgages. The 1996 CBO report estimated that the funding advantage to Freddie Mac and Fannie Mae between 1991 and 1994 was 70 basis points. As we show below, this figure is far above the range of estimates available from other sources. Recall that the CBO estimate is a weighted average of estimates for callable and noncallable long-term debt, and it treats all debt as long-term debt.

Several alternative measures are summarized in Exhibit 6. The LIBOR¹² - Agencies spread indicates that Freddie Mac and Fannie Mae issue short-term debt at 10 to 20 basis points below LIBOR, which is a *short-term* funding cost of certain highly rated banks.¹³ The long-term, noncallable spreads show how yields on Freddie Mac and Fannie Mae debt compare with yields on debt rated AA.¹⁴ The estimates cover a range of sources and methodologies. The first estimate, 10 to 30 basis points, is from a study by Salomon Smith Barney that compares specific

¹² London Inter-Bank Offer Rate ("LIBOR").

¹³ In this table, we use spreads to Agencies as reported in Bloomberg. Bloomberg includes Freddie Mac, Fannie Mae, the FHLBs and government agencies that issue debt in its "Agencies" category.

Freddie Mac or Fannie Mae issues with specific securities issued by two of the largest non-financial corporations and one large financial corporation. All the comparable securities were AA-rated, with large outstanding issue volumes. The second estimate, from Bloomberg, uses a proprietary methodology to adjust for important differences in the characteristics of the securities being compared. The third row is taken from a study by Toevs (2000) using data on Fannie Mae debt and market data from Lehman Brothers. The last estimate is from Ambrose and Warga (1996), a study whose deficiencies were discussed above.

Exhibit 6	
Estimates of the Debt Funding Advantage	
<u>Short-Term Spreads</u>	<u>Basis Points</u>
LIBOR – Agencies Spread: ¹	10-20
<u>Long-Term Spreads</u>	
Highly liquid AA Debt-Freddie Mac & Fannie Mae ²	10-30
Highly liquid AA Debt – Agencies ³	37
AA Financials Debt –Fannie Mae ⁴	34
AA Financial Debt – Fannie Mae ⁵	32 - 46
¹ Bloomberg data, 12-month term, short term debt. ² Salomon Smith Barney (August 2000). ³ Bloomberg data, 5-year average. ⁴ Toevs (2000) for the period 1995-1999. ⁵ Ambrose & Warga (1996) for the periods (1985-90) and (1991-1994).	

Exhibit 6 does not include any entries for spreads on callable debt. These spreads are difficult to measure accurately because callable debt securities are not issued in significant amounts by other corporate issuers and are very heterogeneous. In particular, appropriate comparisons of callable debt must hold constant the restrictions on the call options of the various securities. A given callable debt issue typically will have some restrictions, such as how soon the issuer may exercise the call option. These restrictions can be important to the value the debt issue commands in the marketplace. For example, a security that allowed the issuer to exercise

¹⁴ Standard and Poor's (1997a) rated Freddie Mac and Fannie Mae AA- on a stand-alone basis.

the option after one year will have a lower value than a security that does not allow the issuer to exercise the option until five years have passed. Thus, given the difficulty in obtaining valid spreads for callable debt, a preferable approach is to use spreads on noncallable debt.¹⁵

Exhibit 6 illustrates that alternative estimates of the relevant noncallable spread range from 10 to 40 basis points. The estimates are obtained from a variety of sources and were generated using several methodologies. They are all substantially below the 70 basis points used in the 1996 CBO report. Use of a weighted average of spreads on callable and noncallable debt accounts for some of the inflation in the CBO estimate. We understand that CBO may not incorporate callable spreads into its analysis in the forthcoming report, and if this is true the change will move the CBO estimate closer to the alternative estimates. But the spread will still likely be overstated if the Ambrose-Warga methodology is used to estimate noncallable spreads.

CBO's Sensitivity Analysis

As exhibited above, it is necessary to use ranges rather than single numbers to express the extent to which Freddie Mac and Fannie Mae benefit from a funding advantage for long-term debt. In its 1996 report, CBO recognized that it was using spreads that were measured imperfectly and included a brief sensitivity analysis¹⁶ to illustrate the effect of variation from baseline assumptions for some key parameters, including the spreads on long-term debt. The Ambrose-Warga presentation of results on yield to maturity used mean values for relatively long intervals. This provided almost no basis to assess the stability of the spreads over time or the amount of dispersion in spreads at a point in time. In the absence of either of these elements, it is difficult to have confidence in the estimates. This is particularly true given the methodological

¹⁵ An alternative would be to estimate the fair value of the call option through an option-adjusted spread calculation before the yields are compared. See Kupiec and Kah (2000).

¹⁶ Although we agree that including a sensitivity analysis is, in principle, a useful exercise, we believe that the analysis in the 1996 CBO report understated the dependence of the CBO's conclusions on assumptions about the precise values of key parameters. In the case of debt funding spreads, CBO's attempt to conduct a valid sensitivity analysis was handicapped by the limited information on dispersion in yield spreads between Freddie Mac and Fannie Mae and other private companies provided in Ambrose and Warga's study.

shortcomings identified above and the disparity between the Ambrose-Warga estimate and the available alternatives we present in Exhibit 6.

The CBO sensitivity analysis of the debt funding advantage would have benefited from additional information on how spreads vary, both over time and across other debt issues at a point in time. In the absence of such information, CBO considered a very small reduction in the debt spreads, of 10 basis points, from the 70 basis points used in the primary calculations. This reduction covered only a small fraction of what we know of the possible dispersion of spread values and it closes little of the gap between the CBO figure and alternative estimates. Thus, the sensitivity analysis did not accurately portray the fragility of the 1996 CBO estimates of the funding advantage.

Estimates of the Funding Advantage

Using the information in Exhibit 6, and debt and MBS balances outstanding for Freddie Mac and Fannie Mae, funding advantage spreads are provided in Exhibit 7. The spread on the MBS, reflecting both its long-term nature, and its collateral value, likely falls between the values of the spreads on short-term and long-term debt. We calculate the MBS funding advantage using a spread of 10 to 30 basis points.¹⁷ Higher amounts would be inappropriate given the 20 basis point guarantee fees that the corporations earn and the significant liquidity differences between their MBS and private-label MBS.

¹⁷ Freddie Mac and Fannie Mae's MBS are backed by real-property collateral as well as a corporate guaranty. Thus a proxy for the funding advantage on MBS, net of liquidity and credit quality, could be the yield spread between five-year, AAA-rated bullet debt and comparable Freddie Mac and Fannie Mae debt. In a report, Freddie Mac (1996, p. 33) computed this spread to be about 23 basis points over 1992-1996.

Exhibit 7					
Estimates of the Funding Advantage					
(Data as of September 30, 2000)					
Balances Outstanding					
(Billions of Dollars)					
Security Type	Freddie Mac	Fannie Mae	Totals	Spread (basis points)	Funding Advantage (Billions of Dollars per Year)
Short -term Debt	181	251	432	10-20	0.4 - 0.9
Long-Term Debt	226	356	582	10-40	0.6 - 2.3
MBS	559	701	1,260	10-30	1.3 - 3.8
Total Funding Advantage					2.3 - 7.0

Exhibit 7 summarizes our estimates of the total funding advantage received by Freddie Mac and Fannie Mae through their government sponsorship. Since this calculation is based on a range of spreads for individual components (short-term debt, long-term debt, and MBS), the resulting aggregate must be expressed as a range as well. In each case above, we have been careful to reflect reasonable estimates – on the high side as well as the low side. While we might be inclined to narrow this range, out of an abundance of caution we have included the results of reputable analyses and methodologies that bracket what we consider the more likely figures.

Multiplying the spread range of 10 to 20 basis points for short-term debt by the short-term debt balances outstanding of Freddie Mac and Fannie Mae gives an estimate of their annual funding advantage for short-term debt that ranges from \$0.4 billion to \$0.9 billion. Similarly, the estimates for the annual funding advantage on long-term debt and MBS are \$0.6 billion to \$2.3 billion and \$1.3 billion to \$3.8 billion respectively. Thus, our estimate of the total annual funding advantage for Freddie Mac and Fannie Mae ranges from \$2.3 billion to \$7.0 billion.

IV. Estimates of the Benefits to Mortgage Borrowers Provided by Freddie Mac and Fannie Mae's Activities

Estimates of the full benefits to mortgage borrowers must take consideration of several factors. First, Freddie Mac and Fannie Mae operate directly only in the conforming market. They may only purchase loans at or below the conforming loan limit. The bulk of these loans are fixed-rate mortgages. However, Freddie Mac and Fannie Mae also affect the rates on adjustable-rate and jumbo mortgages, effects ignored by the previous CBO analysis. Additional evidence on the benefits of Freddie Mac and Fannie Mae activities can be inferred from borrower behavior, such as borrowers' utilization of adjustable- versus fixed-rate loans. Measuring the full effect of Freddie Mac and Fannie Mae on conforming loans requires estimates of their effect on jumbo loans and estimates of the effect of depositories on jumbo loans.

Estimates of the Jumbo-Conforming Spread

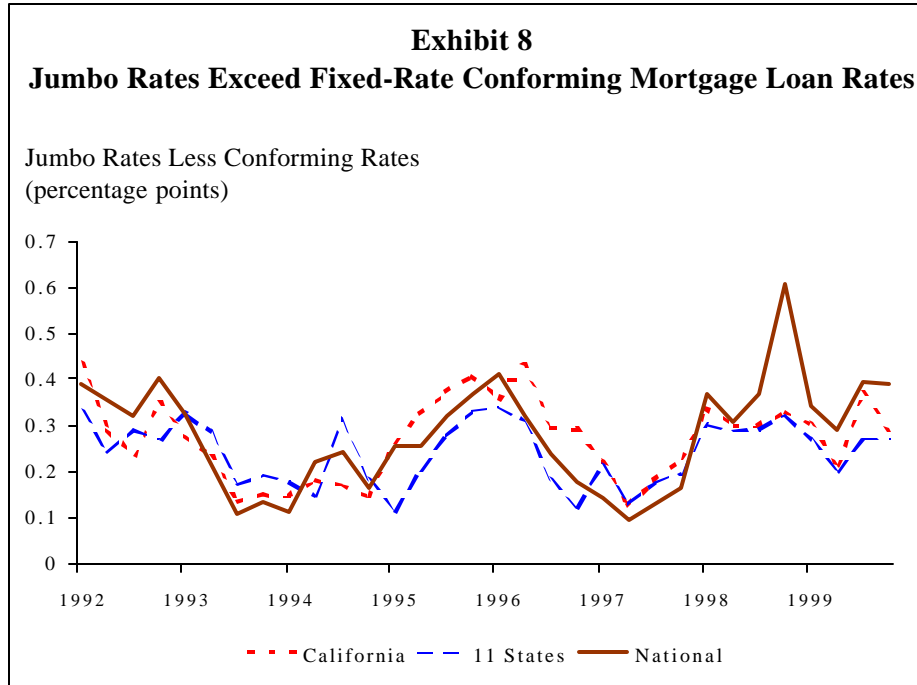
Direct estimates of the effects on conforming, fixed-rate mortgages

The 1996 CBO report used a figure of 35 basis points as its estimate of the jumbo-conforming spread. CBO derived this figure from the commissioned study by Cotterman and Pearce, which evaluated the spread from 1989 through 1993. The 35 basis points reflected an average of relatively high values in the early part of the period and relatively low values toward the end.

Since 1993 the differential has fluctuated. Exhibit 8, from Pearce (2000), charts the path of rates on conforming, fixed-rate mortgages between 1992 and 1999. Three measures are charted in the exhibit. Two are extensions of the 1996 Cotterman and Pearce analysis estimating the differential for California and for 11 states with large numbers of jumbo loan originations. These estimates adjust for risk factors and loan size. The third is an extension of the series charted in Freddie Mac (1996).¹⁸ Averages for these series, over the 1992-99 period, range

¹⁸ The data used for the national series for jumbo rates come from HSH Associates (1992-1998), and Banxquote (1999), and for conforming rates from the Primary Mortgage Market Survey (Freddie Mac). This series is not risk-adjusted.

between 24 basis points and 28 basis points. All three series are in the neighborhood of 30 basis points in 1998 and 1999, when origination rates were very high.



Indirect estimates of the jumbo-conforming spread using ARM shares

Exhibit 8 displays unadjusted and risk-adjusted direct estimates of the jumbo-conforming differential. Additional evidence on the benefits of Freddie Mac and Fannie Mae activities can be inferred from borrower behavior, such as borrowers’ utilization of adjustable-rate versus fixed-rate mortgages (“FRMs”). Freddie Mac and Fannie Mae activities have larger effects on rates of FRMs than ARMs because their funding cost advantage is larger on long-term debt than on short-term debt.¹⁹ First-year rates on ARMs are generally below rates on FRMs, and research by Nothaft and Wang (1992) (as well as others cited by Nothaft and Wang) has shown that the ARM share will decrease generally as the spread between rates on ARMs and FRMs narrows. Thus, Freddie Mac and Fannie Mae reduce the ARM share of conforming loans by narrowing the

¹⁹ ARMs are priced off short-term yields, whereas FRMs are priced off long-term yields. For spreads see Exhibit 7.

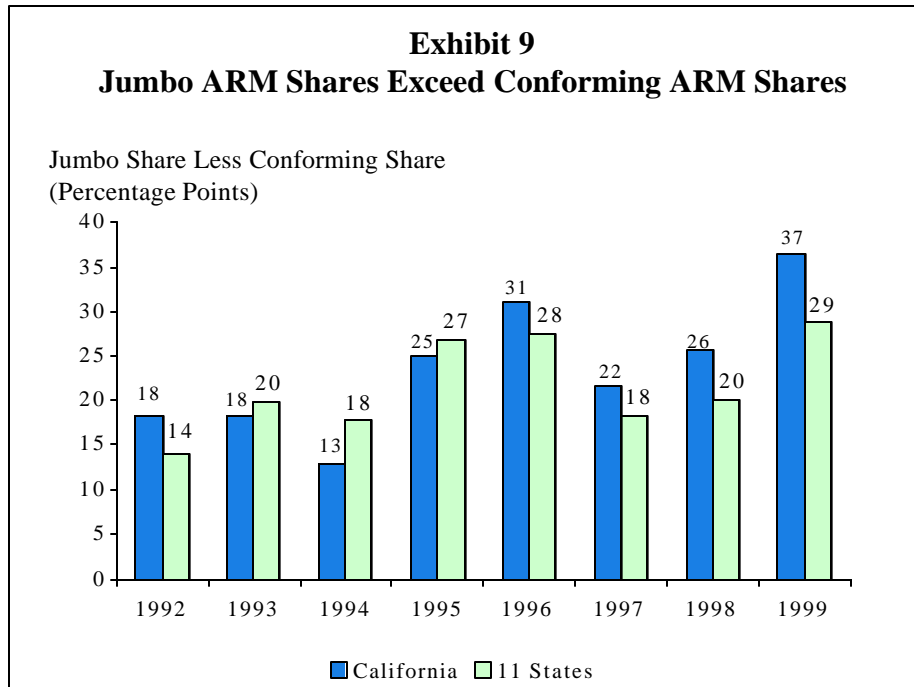
spread between rates on ARMs and FRMs. This effect was noted previously by Hendershott and Shilling (1989).

The research on the determinants of ARM shares indicates that we should expect that a 30-basis-point narrowing of the spread between rates on FRMs and ARMs will produce a 10-percentage point reduction in ARM share.²⁰ The estimates presented in the exhibit above indicate that between 1992 and 1999 rates on conforming FRMs averaged 24 to 28 basis points below rates on jumbo FRMs. This difference implies that we should expect the ARM share to be about 8 to 10 percentage points lower for conforming loans than for jumbo loans.

Pearce (2000) compares the ARM shares in the jumbo and conforming markets using the MIRS data. The comparison was restricted to loans with 15- and 30-year terms to maturity and loan-to-value of at least 60%. The ARM share among conforming loans for amounts between 75% and 99% of the conforming limit was compared to the ARM share among jumbo loans between 115% and 150% of the conforming limit.

The results are shown in Exhibit 9. The jumbo-conforming difference in ARM shares is much larger than the 8 to 10 percentage points expected from the directly-estimated conforming loan differential. The difference in ARM shares ranges between 13 and 36 percentage points in California and between 14 and 29 percentage points in the 11-state aggregate. The differences in ARM share averaged 23.6 percentage points in California and 21.6 percentage points in the 11 states. Differences of this magnitude are consistent with conforming loan differentials much larger than 30 basis points. If a differential of 30 basis points in rates on FRMs was expected to reduce ARM share by 10 percentage points, a 20+ percentage point reduction in ARM share among conforming loans is consistent with a reduction in interest rates on conforming FRMs of 60 basis points or more.

²⁰ Nothaft and Wang (1992). Also, in their concluding section, Hendershott and Shilling (1989), estimate that a 30-basis-point conforming loan differential would reduce the conforming ARM share by 10 percentage points in 1987 and 11 basis points in 1988.



Incorporating effects on jumbo loan rates

So far we have presented two approaches, direct and indirect, to quantifying the difference between rates on jumbo and conforming fixed-rate loans. The direct estimates quantify differences in interest rates that can be observed directly. We use a range that spans two measures for the direct estimates.²¹ The first is an unadjusted measure of the empirical differences between the two sets of loan rates. The second is a risk-adjusted differential obtained by Pearce's update using the Cotterman and Pearce methodology. As an alternative, indirect measure, obtained from inferring the jumbo-conforming differential through the ARM share effect, we use the Nothaft and Wang methodology. These direct and indirect measures are substitute methods for examining the jumbo-conforming differential. The indirect estimates take intangible considerations into account. However, neither of these approaches identifies the full effect of Freddie Mac and Fannie Mae on conforming, fixed-rate loans. Neither takes into account the effect of Freddie Mac and Fannie Mae on jumbo loan rates. Furthermore, neither

takes into account the effect that depositories would have on mortgage rates in the absence of federal sponsorship of Freddie Mac and Fannie Mae. Thus, both are *partial* measures of the effect of the two housing enterprises on mortgage rates.

Measuring the full effect of Freddie Mac and Fannie Mae on conforming loans requires estimates of their effect on jumbo loans and estimates of the effect of depositories on jumbo loans. Unfortunately, the data to obtain either of these estimates do not exist because we do not observe a fully private market. In the discussion below we will estimate the dollar amount of borrower savings by applying interest-rate effects to outstanding mortgage balances. In order to recognize the presence of these hard-to-measure effects, we will use a conservative value of 5 basis points for each. Thus, the directly-measured effect yields a partial reduction in mortgage rates of 29 to 33 basis points when the effect of Freddie Mac and Fannie Mae on jumbo rates is added and a total reduction of 34 to 38 basis points when the effect of depositories on jumbo rates is added. Similarly, the indirectly-measured spread (of 30 to 60 basis points) yields a partial reduction of 35 to 65 basis points and a total reduction of 40 to 70 basis points.

An additional benefit that needs to be accounted for is the reduction in rates on conforming ARMs. Evidence from the Primary Mortgage Market Survey (PMMS) indicates that rates on conforming ARMs are about 5 basis points lower than rates on jumbo ARMs. This suggests that the direct effect of Freddie Mac and Fannie Mae on conforming ARM rates is about 5 basis points. Assuming that depositories reduce jumbo ARM rates by about 5 basis points, the total effect on ARM mortgages is about 10 basis points.

Estimating Dollar Savings to Borrowers

The savings to borrowers are estimated by applying the interest rate reductions to the appropriate balances. The discussion above identified separate interest rate effects for fixed-rate conforming loans, adjustable-rate loans, and jumbo loans. It also pointed out that the estimates of the jumbo-conforming spread should be adjusted for the effects that Freddie Mac, Fannie

²¹ The average difference in commitment rates on fixed-rate, conforming mortgages over the 1992–1999 period is 28 basis points. The average effect from application of the Cotterman and Pearce methodology over this time period provides a range of 24 to 26 basis points.

Mae, and the depositories have on jumbo loan rates. In the discussion below, we present two series of benefit estimates that begin with the jumbo-conforming spread and progressively incorporate the various adjustments. At the end we present two alternative ranges.

The most conservative estimate applies the directly-estimated jumbo-conforming spread, a range of 24 to 28 basis points, to the outstanding balances of conforming, fixed-rate mortgages, which is currently about \$3.3 trillion.²² This procedure yields a range of \$7.9 billion to \$9.2 billion. This estimate is a counterpart to the 1996 CBO benefit estimate, except that it includes all conforming fixed-rate mortgages rather than just those that have been purchased by Freddie Mac and Fannie Mae. Although this range understates the full effect of the two GSEs on conforming mortgage interest rates, it lies completely above the \$2.3 to \$7.0 billion range estimated for the funding advantage. If we add in benefits to borrowers using conforming ARMs (5 basis points applied to \$0.37 trillion) and jumbo loans (5 basis points applied to \$0.65 trillion), the range increases to \$8.4 billion to \$9.7 billion.

These ranges do not adjust the jumbo-conforming spread for the separate effects of Freddie Mac and Fannie Mae and depositories on jumbo loan rates. We have assumed that these two effects, which we cannot measure, would each be about 5 basis points. Incorporating this assumption raises the range on the (fixed-rate) jumbo-conforming spread to 34 to 38 basis points, and the total benefit range becomes \$11.7 billion to \$13.0 billion.

A parallel set of estimates can be constructed using the indirect estimate of the jumbo-conforming spread of 30 to 60 basis points. This range implies that benefits to borrowers using conforming, fixed-rate loans range from \$9.9 billion to \$19.7 billion. Adding in benefits to conforming ARM and jumbo borrowers implies a range of \$10.4 billion to \$20.2 billion. Adjusting the fixed-rate, jumbo-conforming spread for the effect of Freddie Mac and Fannie Mae and the depositories on jumbo rates brings the total to \$13.6 billion to \$23.5 billion.

²² The outstanding balances cited in this paragraph are based on the following figures: conventional loans totaling \$4.30 trillion, of which 15% are jumbo and 85% are conforming. Within the conforming market, 90% are assumed to be fixed-rate and 10% are assumed to be ARMs.

Overall, then, we have two *alternative* ranges for the full benefits. Using the directly-estimated spread, the range is \$11.7 billion to \$13.0 billion. Using the indirectly-estimated jumbo-conforming spread, the range is \$13.6 billion to \$23.5 billion. Both these ranges are well above our range for the funding advantage (\$2.3 billion to \$7 billion).

Exhibit 10			
Effects on Conventional Mortgage Rates, 1992 - 1999			
	Measurement*	Spread (basis points)	
Effects on Mortgage Rates of Freddie Mac & Fannie Mae	Conforming Fixed- Rate Market: Alternative Measures	1. CFRM: Direct Estimate (Commitment Rates)	28
		2. CFRM: Direct Estimate (Pearce, 2000)	24 – 26
		3. CFRM: Indirect Estimate (Pearce, 2000)	30 – 60
	Jumbo Market	4. JFRM: (Assumed)	5
	Conforming ARM Market	5. ARM: (Commitment Rates)	5
		Partial Benefits Range: (Conforming + Jumbo)	
	CFRM: Direct (1&2 + 4)	29 – 33	
	CFRM: Indirect (3 + 4)	35 – 65	
	ARM: (5)	5	
Effects on Jumbo (FRM & ARM) Rates from Subsidies to Other Financial Institutions	6. (Assumed)	5	
	Full Benefits Ranges:		
	FRM Direct (1&2+4+6)	34-38	
	FRM Indirect (3 + 4 + 6)	40-70	
	Conforming ARM (5 + 6)	10	
	Jumbo (4)	5	
TOTAL BENEFITS (\$billions)	Partial Direct**	\$ 8.4 - \$ 9.7	
	Full Direct	\$11.7 - \$13.0	
	Full Indirect	\$13.6 - \$23.5	

* CFRM: conforming, fixed-rate market; JFRM: jumbo fixed-rate market. The fixed-rate conforming single-family market, is \$3.3 billion. The ARM market is \$0.37 billion and the jumbo market is \$0.65 billion (9/30/00). **Direct without depositories' measures \$8.4 to \$9.7. Direct with depositories' having a five basis point effect on jumbo rates measures \$11.7 to \$13.0.

It is important to recognize that the jumbo-conforming differential understates the measure of the benefits provided by Freddie Mac and Fannie Mae because the jumbo rate is already lowered by benefits provided to the jumbo market by financial institutions with government support. That is, the jumbo market also benefits directly from government support through both the existence of the FHLBs and deposit insurance, and indirectly from Freddie Mac and Fannie Mae. The *total* benefit to consumers, including direct and indirect effects of Freddie Mac and Fannie Mae on conforming, fixed-rate mortgages and the additional effects on fixed-rate mortgages from subsidies held by all financial institutions in the jumbo market is in the range of \$13.6 to \$23.5 billion.

V. Freddie Mac and Fannie Mae Increase Efficiency

To this point we have focused on the key question raised in the 1996 CBO report—the extent to which the Freddie Mac and Fannie Mae funding advantage generates benefits to consumers or been absorbed by the two enterprises. Our findings in this area effectively rebut CBO’s 1996 conclusion that a large percentage of the funding advantage is absorbed. They do not, however, address a more general objection to federal sponsorship that has been raised in discussions of Freddie Mac and Fannie Mae. This objection claims that federal sponsorship through the credit markets distorts the allocation of resources that would otherwise arise from the interaction of supply and demand in competitive markets. In the case of housing-related GSEs, the claim is that their activities result in “too much” housing at the expense of other components of the nation’s capital stock, such as factories, offices, and business equipment.

In this section we address that point. As we have pointed out, Freddie Mac and Fannie Mae are not the only federally sponsored entities participating in the residential mortgage market. Federally insured depositories (banks and thrifts) fund over half—\$2.4 trillion—of the conventional mortgages outstanding, either directly through their loan portfolio or indirectly through their MBS holdings (Exhibit 11).²³ Freddie Mac and Fannie Mae fund about one-third of

²³ The total residential market includes single-family and multifamily mortgages. The sources for these data were the Federal Reserve Board, Federal Deposit Insurance Corporation, Office of Thrift Supervision, Freddie Mac and Fannie Mae; data were as of June 30, 2000.

this amount. The remainder is divided among the FHLBs, mortgage companies, insurance companies, pension funds, individuals, and other investors. Analyzing economic efficiency and the benefits and subsidies requires understanding the cost structures and the risk characteristics of the mortgage market.

Exhibit 11
Holders of Residential Mortgage Assets
as of June 30, 2000

Mortgage Debt	Trillions of Dollars
Total Residential	\$5.4
FHA/VA/RHS/Ginnie Mae	\$0.8
State & Local Governments	\$0.1
Total Conventional	\$4.5
Depositories & FHLBs	\$2.4
Freddie Mac & Fannie Mae	\$0.8
Households	\$0.1
Other	\$1.2

Competitive Balance

The competitive balance in the industry depends on which charter can provide funds and manage risks at the lowest cost.²⁴

Freddie Mac and Fannie Mae are more efficient than the depositories in three activities:

- Channeling funds from the global capital markets to mortgage markets;
- Managing mortgage interest-rate risk; and
- Managing mortgage credit risk.

In the management of interest rate risk, Freddie Mac and Fannie Mae take advantage of opportunities to issue callable debt. They also operate at a large scale and are able to spread the expense of sophisticated interest rate risk management across a large volume of risks. IPS Sendero (1999) documents the continued existence of significant interest rate risk in the thrift industry.

In the management of credit risk, the traditional advantage held by Freddie Mac and Fannie Mae has been superior exploitation of geographic diversification. Quigley and Van Order (1991) and Regional Financial Associates (1998) document the importance of geographic diversification in risk reduction. Although elimination of restrictions on branching makes this advantage potentially smaller today than it was in prior decades, it is still an important consideration, because many local and regional banks and thrifts hold significant mortgage portfolios.

Another important advantage for Freddie Mac and Fannie Mae in credit risk management is their prominent role in the development of automated underwriting systems. Credit risk evaluation and management is rapidly shifting from the rules of thumb used in manual underwriting to the rigorous statistical analysis of default risk that supports mortgage scoring and automated underwriting. Straka (2000) and Standard and Poor's (1997b) summarize this transformation. Freddie Mac and Fannie Mae have access to larger and more comprehensive data files on loan performance than other major mortgage market participants. This resource gives them an advantage in development of models with strong predictive power across a broad range of risks.

Depositories have a few advantages of their own, beyond their federal sponsorship. They have more local-market knowledge that can be exploited in the assessment of credit risk. They also have opportunities to sell other products to their mortgage customers. These advantages enable depositories to fund some loans at costs below what they otherwise would incur.

²⁴ Van Order (2000a) describes the “dueling charter” framework for depositories and Freddie Mac and Fannie Mae, while Van Order (2000b) provides a more technical discussion.

Second Best Solution

Some critics of Freddie Mac and Fannie Mae contend that their federal sponsorship distorts resource allocation in that credit is diverted into residential real estate from other uses that, at the margin, have higher values. It is not our purpose here to address the desirability of promoting the financing of housing. Rather, we simply note that this argument fails to take into account the distortions introduced by federal deposit insurance.²⁵

Exhibit 12 presents an analysis of the removal of the funding advantage to Freddie Mac and Fannie Mae in a situation where the implicit subsidization of the mortgage market through depositories is retained. The exhibit is taken from an illustration by [Miller and Capital Economics](#) (2000), who conclude that "... revoking the GSEs' charters would reduce welfare (economic efficiency). Thus, we conclude that revoking Freddie Mac's and Fannie Mae's charters cannot be justified on the grounds of economic efficiency" (page 14).

²⁵Chairman Greenspan has often noted the existence of a funding advantage for banks. "Government guarantees of the banking system – deposit insurance and direct access to the Fed discount window and payment system guarantees – provide banks with a lower cost of capital than would otherwise be the case." Testimony, House of Representatives, Commerce Committee, April 28, 1999.

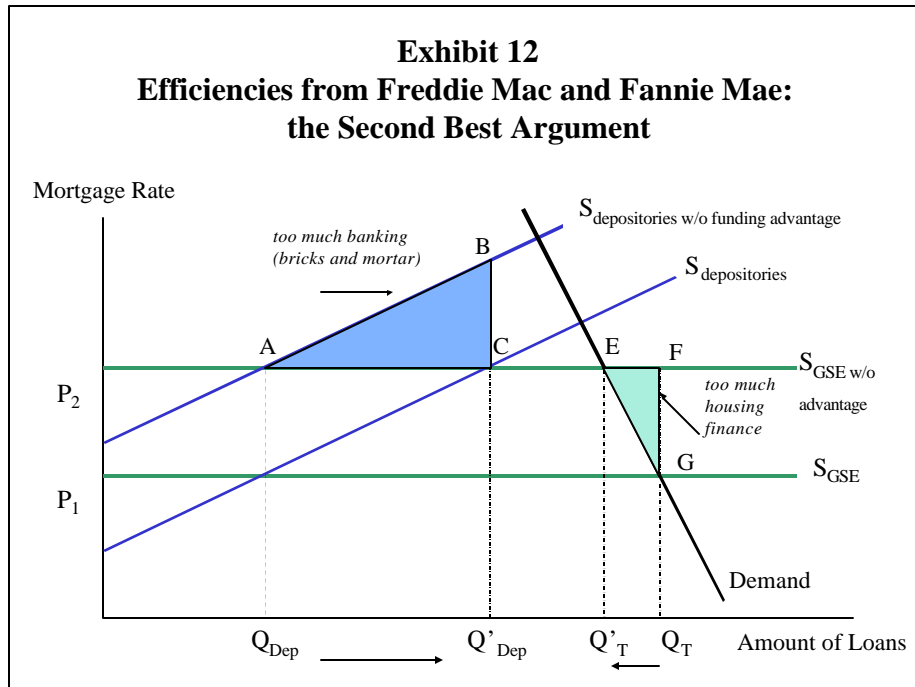


Exhibit 12 indicates that Freddie Mac and Fannie Mae provide an efficient allocation of resources from a “second best” perspective. Elimination of Freddie Mac and Fannie Mae’s funding advantage would provide an efficiency improvement (triangle EFG) in that some of the excess housing finance would be removed from the market. This improvement would be more than offset by an efficiency loss resulting from an increase in (high cost) production by depositories (triangle ABC). Thus, elimination of Freddie Mac and Fannie Mae’s federal sponsorship would lead to a loss of allocative efficiency, not a gain.²⁶ The loss would be greater the larger is the funding advantage of depositories relative to Freddie Mac and Fannie Mae. We next consider what the magnitude of the funding advantage, given deposit insurance, might be for the depositories.

²⁶ This result depends on the relative elasticities of the demand and supply curves. See Capital Economics (2000) for the full discussion.

Cost of Funds Comparisons

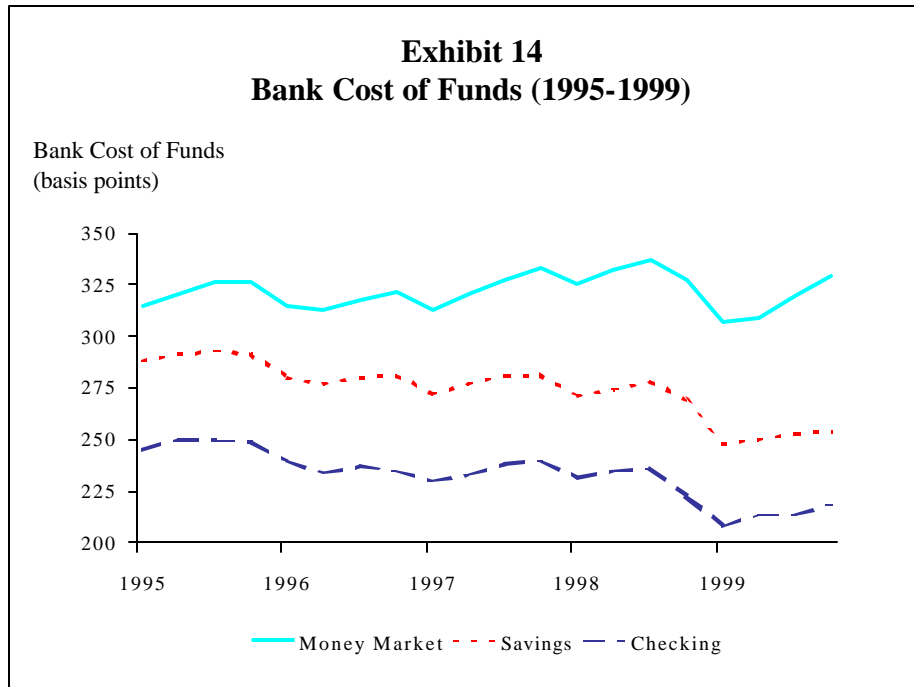
The GSE-AA spreads presented in Exhibit 6 do not provide a complete picture of the funding of Freddie Mac and Fannie Mae relative to other financial market participants. One must also address the sources of funds available to banks and thrifts issuing federally insured deposits. Exhibits 13 and 14 (as well as Exhibit 4 provided earlier) show that Freddie Mac and Fannie Mae have no funding advantage at all relative to depositories. Exhibit 13 lists average spreads from 1995-2000 between depository instruments and relevant GSE yields. Exhibits 4 and 14 plot these spreads on a monthly basis.

Exhibit 13
Bank Cost of Funds Are Below GSE Yields

Bank Cost of Funds less GSE Yields:

6 month CDs:	-103 bps
One year CDs:	-16 bps
11 th District COFI: ¹	-95 bps
Money Market:	-322 bps
Savings Accounts:	-274 bps
Checking Accounts:	-233 bps

¹The FHLB-San Francisco, 11th District, Monthly Weighted Average Cost of Funds



Using several alternative series based on data from bank call reports and Bloomberg, we clearly demonstrate that depositories have an average cost of funds below that of Freddie Mac and Fannie Mae. As shown above, this implies that charter revocation of Freddie Mac and Fannie Mae would lead to less efficiently supplied housing finance.

VI. Conclusions

The funding advantages that Freddie Mac and Fannie Mae derive from their federal charters and the benefits they provide to homeowners cannot be measured precisely and are better expressed as ranges. Reasonable estimates of the ranges reveal that the benefits to homeowners far exceed the funding advantages of Freddie Mac and Fannie Mae. We find:

- The 1996 CBO study overstated the funding advantage received by Freddie Mac and Fannie Mae and underestimated the benefits provided by them. CBO incorrectly treated all debt as long-term debt despite the lower funding advantage on short-term debt and included separate spreads for callable debt and noncallable debt despite the difficulties inherent in measuring callable spreads. Rather than the 70 basis point funding advantage contained in CBO's 1996 report, we believe a better estimate places that funding advantage in the range of 10 to 40

basis points. Further, the 1996 CBO report did not incorporate the effect Freddie Mac and Fannie Mae have on conforming loans not purchased by them or on jumbo loans.

- Benefits to consumers provided by Freddie Mac and Fannie Mae far exceed the Freddie Mac and Fannie Mae funding advantage. The benefits to consumers are at least \$8.4 billion and may be as high as \$23.5 billion. The funding advantage to Freddie Mac and Fannie Mae lies between \$2.3 billion and \$7.0 billion.
- In addition, Freddie Mac and Fannie Mae provide benefits, not measured in this paper, beyond those that can be quantified in terms of savings on mortgage interest expense by homeowners. These benefits include maintenance of liquidity in the mortgage market during periods of financial turbulence and expanding homeownership opportunities for low-income and minority families.
- Given that depositories would subsidize housing finance in the absence of Freddie Mac and Fannie Mae, federal sponsorship of Freddie Mac and Fannie Mae provides a second best structure that supplies housing finance more efficiently than could the depositories alone. Depositories receive funding advantages through deposit insurance, access to Federal Reserve Bank liquidity and FHLB advances and have an average cost of funds lower than Freddie Mac and Fannie Mae.

In summary, CBO's 1996 report was deficient in many respects. The methodology used overstated the funding advantage Freddie Mac and Fannie Mae derive from their charters, and the evaluation of consumer benefits understated some components and ignored others. A repeat of these mis-measurements in the new report would render its findings and conclusions without credible foundation. A more accurate approach shows that the current arrangement benefits consumers much more than any funding advantage received by Freddie Mac and Fannie Mae.

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