On Truly Privatizing Fannie Mae and Freddie Mac: Why It’s Important and How To Do It

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I. Introduction

The Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) are the two extremely large companies that are at the center of the residential mortgage finance system of the United States. They are similar in size, function, purpose — and controversy. Two years ago Freddie Mac experienced major accounting problems that eventually led to a wholesale change of top management. A year ago fall Fannie Mae experienced major accounting problems that led also to a wholesale change of its top management.

The controversies that surround these two organizations are not accidental. Their special hybrid (quasi-governmental) form, large sizes, rapid recent growth rates, and dominance of residential mortgage finance have placed them in the policy spotlight, and this public scrutiny is unlikely to disappear any time soon.

The focus of the current policy attention that is being paid to these two companies is largely centered on reforming the regulatory structure and processes that surround them. But these reform efforts are, at best, a second-best approach. Instead, a better policy focus would be to remove all of the quasi-governmental features that make the two companies special — ie, truly privatizing them. Thus, the goal would be to allow them to function as effectively as their inherent organizational strengths and skills would permit — but without any of the special quasi-governmental features that give them special advantages as compared with other companies.

This paper will offer the reasons why this goal is worthwhile and a straightforward way that it can be achieved. Section II provides a brief review of Fannie Mae and Freddie Mac and their special features. Section III will outline the major policy problems that follow from their special status. Section IV will offer a straightforward plan for privatizing the two companies.

II. Fannie and Freddie: A Brief Overview

Fannie Mae and Freddie Mac are the fourth and fifth largest companies in the U.S., when measured by assets, as of the end of 2004. They each operate two related lines of business: They issue and guarantee mortgage-backed securities (MBS) that have residential mortgages as their underlying assets, and they invest directly in residential mortgage assets. The latter investments are funded overwhelmingly by debt. Their growth rates in the 1990s and in the early years of the current decade were especially breathtaking (although growth in 2004 slowed considerably for both companies). As was mentioned in the Introduction, these rapid growth rates and their current very large sizes are major sources of the two companies’ current prominent position in the public policy spotlight.

A. Their special features and advantages.

Fannie Mae and Freddie Mac are not ordinary corporations. Though they are owned by shareholders and their shares of stock are traded on the New York Stock Exchange, they have an array of connections with the federal government that make them quite special:

- They were created by Acts of Congress and thus hold special federal charters (unlike virtually all other corporations, which hold charters granted by a state, often Delaware).
- The President of the United States can appoint 5 of the 18 board members of each company.

1 This paper draws heavily on White (2003, 2004) and Frame and White (2004, 2005). Further details, summaries of the controversies, and back-up references for the points and arguments that are developed in this paper can be found in those studies. An earlier version of this paper was presented at a conference on “Fixing the Housing Finance System,” Wharton School, University of Pennsylvania, April 27, 2005.

2 In 2004 the Bush Administration ceased appointing those board members.
– The Secretary of the Treasury is authorized to purchase up to $2.25 billion of each of their debt liabilities.\(^3\)

– They are exempt from all state and local income taxes.

– They can use the Federal Reserve as their fiscal agent.

– Their debt is eligible for use as collateral for public deposits, for purchase by the Federal Reserve in open-market operations, and for unlimited investment by federally insured depository institutions (i.e., commercial banks and saving and loan associations [S&Ls or thrifts]).

– Their securities are exempt from the Securities and Exchange Commission’s registration and reporting requirements and fees.\(^4\)

– Their securities are explicitly government securities under the Securities Exchange Act of 1934.

– Their securities are exempt from the provisions of many state investor protection laws.

– They are exempt from bankruptcy law, and no receivership provisions apply, so that in the event that they were to experience financial difficulties and could not satisfy all financial claims made upon them, only the Congress could resolve the situation.

**B. Some disadvantages.**

The two companies are also subject to substantial restrictions:

– Their special charters restrict them to residential finance.

– They are explicitly forbidden to engage in mortgage origination.

– They are subject to a maximum size of mortgage (which is linked to an annual index of housing prices) that they can finance; i.e., a maximum value for a mortgage that can be the basis for issuing MBS or purchased for holding in their portfolios. For 2005, that maximum (which is described as the “conforming loan” limit) is $359,650.

– The mortgages that they finance must have at least a 20% down payment (i.e., a maximum loan-to-value ratio of 80%) or a credit enhancement (such as mortgage insurance).

– They are subject to safety-and-soundness regulation by the Office of Federal Housing Enterprise Oversight (OFHEO), which is located within the Department of Housing and Urban Development (HUD).

– They are subject to “mission oversight” by HUD, which approves specific housing finance programs and sets social housing targets for the two companies.

**C. The immediate consequences**

The special features of the two companies have created an aura or “halo” around the two companies, often summarized in the phrase “government-sponsored enterprises” (GSEs) that is used to describe them and a few other organizations that embody similar perceptions of extensive federal government entanglements with a nominally private organization. Consequently, the financial markets have come to believe that the federal government would likely “bail out” the companies—and thus their creditors—in the event that either experienced financial difficulties—even though their charters and each security that they issue state explicitly that these companies’ obligations are not obligations of the federal government.

Nevertheless, this perception of a likely bailout has persisted and has come to be called the belief in an “implicit guarantee.”\(^5\)

An immediate consequence is that the two companies are able to borrow funds at rates that are better than those of corporations that are rated AAA, though not quite as good as the rates at which the US Treasury borrows, even though the companies’ ratings on a stand-alone basis (which would ignore the likely government support) would be only AA-. This favorable borrowing possibility translates empirically into approximately a 35–40 basis point advantage on their direct corporate debt and about a 30 basis point advantage on their MBS issuances. Since the two companies are highly leveraged—supporting their assets plus MBS through 96–97% debt and only 3–4% equity—the consequences of this borrowing advantage are substantial.

In turn, the companies pass most—but not all—of their borrowing advantages through to residential mortgage borrowers. The interest rates on conforming loan mortgages are about 20–25 basis points lower than the rates on otherwise similar “jumbo” mortgages that are above the size limit for conforming mortgages.

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\(^3\) This is often paraphrased as their having a potential line of credit with the Treasury.

\(^4\) In 2002, in an effort to quell criticism and fend off legislative action, the two companies “voluntarily” announced their intention to adhere to the SEC’s reporting requirements. Thus far, only Fannie Mae has actually registered its equity securities.

\(^5\) One important reflection—and reinforcement—of that halo is the way that financial information (e.g., current prices and yields) about the two companies’ debt obligations are listed in financial publications. The Wall Street Journal, for example, lists this information in a special box that is labeled “Government Agency & Special Issues” and that is often located next to its listings of Treasury debt obligations (and usually on a different page from its listings of corporate debt obligations).

\(^6\) Most notable among these other GSEs are the Federal Home Loan Bank (FHLB) system and the Farm Credit System.

\(^7\) Recent discussions by the credit rating agencies in justifying the AAA ratings that they have assigned to the debt of the two companies have been explicit in their description of their belief in a high likelihood of a federal bailout and thus of an implicit guarantee. This belief is supported by the history of the federal government’s implicit forbearance when Fannie Mae was insolvent on a market-value basis in the late 1970s and early 1980s and the government’s explicit bailout (with taxpayer funds) of another GSE, the Farm Credit System, in the late 1980s.
D. Some additional consequences.

Because Fannie Mae and Freddie Mac were able to operate nationally at a time when other mortgage lenders were geographically constrained, they were able historically to bring a greater degree of uniformity and stability to residential mortgage financial markets that otherwise would have been localized and disconnected. Further, their size and stature may have been important in allowing them to serve as focal points for the adoption of standards with respect to technological advances in the processes of mortgage origination. And though neither was the pioneer in the issuance of MBS – that role was played by Ginnie Mae in 1970 – Freddie Mac was a fast second in 1971. There is little question that the special GSE status of the two companies helped establish MBS as a worthwhile alternative financing channel alongside the more traditional channel of the portfolio lender.

III. The Problems

A. Housing Issues

The encouragement for housing purchase and consumption that Fannie Mae and Freddie Mac provide are not an isolated policy foray. Instead, these two companies and their effects are part of a far larger mosaic of policies at all levels of government to encourage greater construction and consumption of housing – the most notable of which are the income tax treatment of mortgage interest and property taxes on personal residences and the exemption from capital gains taxes of all or most of the capital gains on residences.

There are sound “positive externalities” arguments (supported by a growing empirical literature) for encouraging home ownership: for example, a home-owning household is more likely to care about its neighborhood than is a renting household. Such arguments would argue for modest, focused programs that would be in the form of explicit subsidies for down payments and/or monthly payments for low- and moderate-income families that would not otherwise be homeowners and are thereby induced to become first-time buyers.

Unfortunately, instead of modest, focused programs, housing public policy has embraced broad-brush, unfocused approaches that mostly encourage households that otherwise would buy anyway simply to buy larger and better appointed homes on larger plots of land. As a consequence, the US economy has invested excessively in housing and insufficiently in other forms of physical and human capital.

The encouragement for home ownership that is provided through the special status of Fannie Mae and Freddie Mac – the 20-25 basis point reduction in mortgage interest rates – is of this same broad-brush nature, with the same unfortunate consequences. Further, the conforming loan limit is far above the size of the mortgage that could be used to purchase the median price home in the US. For example, in 2003 the conforming loan limit was $322,700. In that year, the median price of a new home that was sold in the US was $195,000, and an 80% mortgage on that home would have been only $156,080. Also in that year, the median price of an existing home that was sold in the US was $170,000, and an 80% mortgage on that home would have been only $136,000.

As a consequence, the two companies’ efforts are not focused on encouraging low- and moderate-income households to become first-time home buyers. Despite HUD-set targets for such activity, which the companies have met, recent evidence gathered by HUD (in support of more ambitious targets) indicates that Fannie Mae and Freddie Mac have lagged the overall market in providing mortgage finance to this segment.

In sum, US housing policy in general and Fannie Mae’s and Freddie Mac’s activities in specific have failed to focus on the true positive externalities from home ownership and have simply encouraged the construction and consumption of too much housing in the U.S. economy. “Too much is never enough” is not a sensible basis for public policy.

B. Safety and Soundness.

A recent policy focus has been on the safety-and-soundness regulation to which Fannie Mae and Freddie Mac are subject. Since the financial markets believe that the federal government would bail out the two companies and since this belief seems likely to become reality in the event of the companies’ financial difficulties, the federal government has a legitimate interest in trying to ensure the solvency of the two companies – although (ironically) the presence of effective safety-and-soundness regulation may strengthen the financial market’s perception that the federal government to encourage greater construction and consumption of housing – the most notable of which are the income tax treatment of mortgage interest and property taxes on personal residences and the exemption from capital gains taxes of all or most of the capital gains on residences.

4 These expenses can be deducted from gross reported income, but the implicit rent of an owner-occupier is not included in income.

5 Also, the reduction in mortgage interest rates is fundamentally a subsidy for borrowing. Thus, a household can refinance a home with a larger mortgage (which is a frequent occurrence at times of falling interest rates) and thereby take greater advantage of the subsidy. But such actions do not affect the rate of home ownership.

6 The conforming loan limit is 50% higher for homes purchased in Alaska, Hawaii, and the US Virgin Islands, and it is higher for two-unit, three-unit, and four unit-residences (all of which are considered “single-family” homes) and for multi-family rental housing.

7 This evidence is part of the regulatory analysis underlying HUD’s decision in November 2004 to set more ambitious goals. See http://www.hud.gov/offices/hsg/gse/gse.cfm. The Bush Administration’s federal budget documents for fiscal years 2005 and 2006 offer brief summaries of this evidence. See USOMB (2004, 2005).

8 Though senior federal officials have (only in the past few years) begun denying the existence of any “implicit guaranty”, they have yet to state explicitly that they would not bail out either company in the event of financial difficulties.
government would bail out the two companies.

Only in 1992 did the federal government explicitly recognize this interest by creating OFHEO and empowering it with safety-and-soundness authority. Nevertheless, until it challenged Fannie Mae’s accounting practices in September 2004, OFHEO was perceived politically as a weak regulatory agency with inadequate regulatory powers and weak political effectiveness in Congress (as compared with, for example, the bank regulatory agencies).

The Congress held hearings on regulatory reform in 2003, 2004, and 2005 but was unable to pass legislation that would be agreeable to the Bush Administration. The perceived weakened political positions of Fannie Mae and Freddie Mac (because of their respective accounting difficulties) have increased the likelihood that some measure of reform will be signed into law in 2006.

C. Systemic risk.

The large sizes of Fannie Mae and Freddie Mac, their focus on a narrow class (residential mortgage) of assets, their relative importance in the area of residential mortgages, and their relatively high leverage and relatively low capital levels (3-4% of assets) has recently generated a debate concerning systemic risk – ie, the consequences for the rest of the economy if either of them were to experience financial difficulties.

These concerns extend beyond just the losses that the two companies’ creditors would experience in the event of the two companies’ financial difficulties. Rather, systemic risk issues focus on one or both of the following: (1) a fear that there would be a cascading effect because the losses experienced by the companies’ creditors would be so severe as to cause those companies to become bankrupt or insolvent, in turn causing further waves of financial losses and failures; or (2) a fear that the financial difficulties of either company could substantially affect the residential mortgage markets, with further adverse consequences for home buyers and sellers, realtors, home builders, etc.

The issue of systemic risk is linked inexorably to the issue of safety and soundness. Systemic risk is one potential justification for safety-and-soundness regulation. To the extent that safety-and-soundness regulation is adequately addressing the solvency of the regulated institutions, systemic risk concerns should be diminished.

It is no accident, then, that the systemic risk issues with respect to Fannie Mae and Freddie Mac arose at roughly the same time as the concerns about the inadequacy of OFHEO’s safety-and-soundness regulation of the two companies. And, if the safety-and-soundness issues outlined above are adequately addressed in legislation, the systemic risk concerns that surround the two companies should similarly diminish.

Nevertheless, because safety-and-soundness regulation will never be perfect, and because there are only the two large and prominent GSEs at the center of the secondary mortgage finance system, some systemic risk concerns are likely to persist.

D. The absence of prepay penalties and the bearing of interest-rate risk.

The standard residential mortgage in the U.S. is a 30-year fixed-rate debt instrument on which the borrower can prepay at any time with no penalty. The absence of an explicitly priced prepay option for the borrower means that the lender bears all of the interest-rate risk of these instruments. This additional risk for the lender causes mortgage interest rates to be higher than if a prepay option were explicitly priced. There is a resulting net benefit for those who do indeed prepay their mortgages (eg, who refinance them when interest rates fall below the levels that prevailed when the original mortgage was issued) and a net cost for those who do not prepay; in essence, the latter are cross-subsidizing the former.

Why don’t the mortgage markets offer borrowers the choice of a lower interest rate if they accept a prepay penalty or a higher interest rate if they want the “free” prepay option? A patchwork of laws that forbid prepay penalties in some states seems to be part of the answer. But another part seems to be the policies of Fannie Mae and Freddie Mac, who generally buy or securitize only mortgages that do not have prepay penalties.

E. Possible efficiencies or inefficiencies.

Because of the two companies’ special status and favorable borrowing rates, it is extremely difficult to determine how much of their current size and prominence (or of any proposed horizontal or vertical expansionary initiative) is due to the inherent efficiencies of their portfolio and

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13 Calls for explicit safety-and-soundness regulation of the two GSEs had, of course, preceded the legislation that created OFHEO. See, for example, Moe and Stanton (1989) and Stanton (1990, 1991).
14 For example, OFHEO took almost 10 years to establish and implement the risk-based capital requirements for Fannie Mae and Freddie Mac that were mandated in OFHEO’s enabling 1992 legislation. And, most important in the current environment, it lacks the authority to establish a receivership in the event of financial difficulties for either company, and it lacks the authority to modify the minimum capital requirements that apply to the two companies.
15 Besides issues of regulatory authority, including the crucial issue of receivership powers, other points of dispute have included whether the regulatory agency should stay in HUD; if not, whether it should be moved to the Treasury (and if so, how much direct oversight the Secretary of the Treasury would have over the agency) or whether it should be moved outside the executive branch entirely and established as a separate “independent” agency; whether the regulation of the FHLB system should be consolidated into whatever regulatory agency emerges or whether that system’s regulator (the Federal Housing Finance Board) should remain intact; and how the agency should finance its activities.
16 It has been one of the traditional justifications for the safety-and-soundness regulation of depository institutions.
MBS operations and how much is due to that special status and those favorable borrowing rates. Without a “clean” market test, a definitive answer is likely never to be known.

IV. True Privatization as the Solution, and How to Do It

A. True privatization as the solution.

As was discussed in Section II, Fannie Mae and Freddie Mac are nominally “private” companies. But as that Section also described, they embody an array of special features that cause them better to be described as GSEs rather than as purely private entities. And, as Section III discussed, their GSE status creates or contributes to an array of serious problems.

Though regulatory reform is currently the topic for policy debate, such reform is, at best, a second-best solution. Instead, true privatization of the two companies—ie, the withdrawal of their special Congressional charters and all of the special features that go with those charters—is the best solution. Figuratively, public policy should shake the hands and pat the backs of the senior management of the two companies (and their predecessors for the past three decades), praise them and tell them “job well done” (for helping bring about the securitization revolution), and point them toward the Delaware Secretary of State’s office in Dover for their new corporate charters. The goal would not be to destroy or remove the companies from the marketplace but instead to allow them to compete in the marketplace on their own true merits (and without their special quasi-governmental status and advantages).19

Faced with the withdrawal of their special federal charters, the two companies would indeed likely seek Delaware charters and hope to become “ordinary” Delaware companies—albeit initially quite big ones but also, importantly, subject to the normal bankruptcy laws. To the greatest extent possible they should be allowed to do so. At the Congressional hearings that would precede the passage of any privatization legislation, the Secretary of the Treasury should loudly proclaim that (after privatization) the Treasury will treat the two companies no differently than it does other corporations in the US economy and would trust to the bankruptcy courts to deal with any financial difficulties. Similarly, the President should reiterate that message at the official signing of the legislation.

Along with the withdrawal of their special Congressional charters and attendant features ought to be the withdrawal of safety-and-soundness regulation of the two companies and of any special HUD oversight or Community Reinvestment Act-like requirements. Market forces, supplemented by explicit federal subsidies to low- and moderate-income households who are first-time home buyers, should prevail.

Although the financial markets might initially believe that the two companies’ large sizes would mean that the companies were “too big to fail” (ie, that in the event of financial difficulties the federal government would bail them out anyway), the markets would surely be less certain of this position than they currently are with respect to the implicit guarantee. The borrowing costs of the two companies would rise—perhaps by as much as the 40 basis point differential that accompanies current beliefs.20 With a smaller cost advantage, their presence in the conforming residential mortgage segment—as investors and as securitizers—would surely diminish. But also, without the conforming loan limit and the statutory 20% down payment, they would be free to enter jumbo lending and sub-prime mortgages, as well as other areas of consumer finance where their lending expertise might be valued. But with true privatization there would be a market test for their presence. And the size and variety of the other market participants would make it unlikely that “predatory” behavior (in the antitrust sense of initially cutting prices below marginal costs, in the hopes of gaining an eventual monopoly) would be worthwhile or attempted. It is this author’s guess that the net effect would be a shrinkage in the asset sizes of the two companies.

With the increase in their borrowing costs, it is likely that the interest rates on conforming residential mortgages would increase—by perhaps as much as 25 basis points. This would be a relatively modest increase—one that (in nominal terms) the mortgage markets accommodate frequently. Such an increase would be all to the good, as it would reduce the overall level of the broad-subsidy provided to housing. In place of the GSEs’ special status, the federal government should expand its on-budget programs to encourage home ownership by low- and moderate-income households.

If the two companies’ sizes do shrink after they become Delaware corporations, concerns about “too big to fail”, their systemic risk,21 and the concomitant need for safety-and-soundness regulation would diminish. Further, their diminished role in the mortgage markets would increase the likelihood that the prepay option would be

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17 It is interesting to note that the legislation that created OFHEO in 1992 also called for a set of studies on privatizing the GSEs, which were eventually published in 1996. See USHUD (1996).

18 As a related policy matter, if Fannie Mae and Freddie Mac are truly privatized, then the FHLB system also should be truly privatized.

19 Arguably, some of their current systems and organizational efficiencies were developed with the help of their special advantages of the past. Nevertheless, any effort to try to recapture these advantages would be an unnecessary diversion from the important goal of removing their special advantages going-forward and would risk the elimination of real efficiencies.

20 Alternatively, they would have to raise more (costly) capital to reassure their creditors that the two companies’ relatively low borrowing rates were justified; or some combination of higher capital levels and higher borrowing costs.

21 Also, since depositories tend to be highly leveraged, as their holdings of Fannie Mae and Freddie Mac straight debt securities diminish, concerns about cascading effects should diminish.
priced explicitly. Finally, with the implicit guarantee gone, their activities in any sector would meet a market test.

In sum, true privatization would address all of the concerns raised in Section III.

B. How to do it.

The best way to achieve true privatization is to follow the Nike Corporation’s admonition: Just do it!

This change of policy would most directly affect those who bought Fannie Mae’s and Freddie Mac’s securities believing in the "implicit guarantee". Public policy owes such purchasers no special favors and no special transition, since they have been warned explicitly that the GSEs’ obligations were not those of the federal government and nevertheless have chosen to ignore that information. Indeed, to establish special transition rules would be to reward those who ignored the warnings – roughly similar to rewarding those who build houses on flood plains, despite warnings not to do so, and who are then bailed out by Congress.

But what of potential sharp disruptions to the residential mortgage market? The simple answer is that there are unlikely to be sharp disruptions. First, the magnitude of the changes in the prices of the companies’ outstanding debt are unlikely to be large. Recall that the two companies’ special borrowing advantage is about 40 basis points. The removal of their special status would cause the financial markets to discount the expected payment streams on their existing debt by (at most) an additional amount that would equal those same 40 basis points. This change is well within the kinds of fluctuations that the financial markets deal with frequently. For example, for a 10-year 5% straight bond, a 40 basis point increase in the discount rate that is applied to the bond’s payment stream would mean a decline in the bond’s price by approximately 3%. More generally, if the average duration of the liabilities of the two companies is about 5 years and their average interest expense on those liabilities is 4%, the average price decline over all of those liabilities would be about 2%.

Second, and at least as important, the privatization process would not be the equivalent of a sudden bankruptcy filing. Any changes – small or large – in prices in the mortgage markets would be gradual and transitional. After all, any privatization would occur in a highly political environment and would not be sprung on the markets overnight.

One possible scenario would unfold as follows: The administration would announce its intentions to seek true privatization legislation – or, perhaps, announce its intentions to appoint a task force to recommend legislation. Subsequently, legislation would be introduced in Congress. Congressional hearings would be held. Majority votes of both houses of Congress would eventually occur, and the President would then sign the legislation. Progress would thus be incremental, with the market participants’ gradually adjusting their estimates of the likelihood that true privatization would prevail. The prices of the two companies’ securities would change incrementally, with relatively small losses or gains occurring at any point in time.

C. Second-best.

Despite its superiority in dealing with the real problems raised by the special status of Fannie Mae and Freddie Mac and its straightforward simplicity, true privatization is an unlikely prospect for the immediate future. Their recent accounting stumbles notwithstanding, Fannie Mae and Freddie Mac and their roles in broadly encouraging housing construction and consumption still enjoy widespread political support on Capitol Hill.

Consequently, second-best policies must be considered. These should consist of: improved safety-and-soundness regulation (which must, at its heart, embody a market-value accounting framework), enforced by a regulatory agency that is lodged in the Treasury and that has receivership powers; the adoption by bank and S&L regulators of the standard loans-to-one-borrower limits on the two GSEs’ straight debt obligations; the freezing of the conforming loan limit at its current level of $359,650, which would force the two companies gradually to focus more of their efforts on the lower end of the market, where the positive social externalities of home ownership are the strongest;23 the maintenance of HUD’s pressure on the two companies to focus more of their efforts on the lower end of the market; and the repeated statements by the Secretary of the Treasury and other senior officials of every administration that the federal government means what it says on every GSE security and that they have no intention of ever “bailing out” either company or its creditors.

References


23 As was done for the privatization of Sallie Mae (see Dean, Moskowitz, and Cipriani [1999] and Overend [2001]) and as has been advocated for Fannie Mae and Freddie Mac by Ely (2004) and Wallison, Stanton, and Ely (2004).

24 A freeze of the conforming loan value is a far superior method for limiting their size and growth, as compared to a simple cap on their assets or on their borrowing. A freeze would gradually but directly force them to focus on the lower end of the mortgage market, where the positive social externalities are the greatest. A cap on their size (assets or borrowing) would instead cause them to focus more on the upper end of the mortgage market, where their margins (for any given size) would likely be higher, unless HUD’s “mission regulation” forces them farther into the lower end.
Frame, W Scott and Lawrence J White, “Regulating Housing GSEs: Thoughts on Institutional Structure and Design,” Economic Review (Federal Reserve Bank of Atlanta), 89 (Second Quarter), pp. 87-102.


