

# Demystifying GSE Credit Risk Transfer

## Part I – What Problems Are We Trying to Solve?

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## **Introduction**

In the mid-2000s, I was recently retired from my nearly 30-year career at JPMorgan Chase and its predecessors, and happened to be at the airport in Washington on my way home to New York from a meeting at the US Treasury. I ran into an old colleague, who then was a very senior executive of one of the two major government-sponsored enterprises (GSEs), Freddie Mac and Fannie Mae. As we chatted while inching forward in the security line, he used a phrase, referring to his own company, that I still remember today: “Who in their right mind would have invented a company with all this concentration of just one type of risk?”

He was referring, of course, to the fact that the two GSEs were “monolines,” meaning they were in one line of business, in this case the residential mortgage business.<sup>1</sup> And they are large – \$2 trillion in size for Freddie Mac, and \$3 trillion for Fannie Mae, for a total of \$5 trillion dedicated to residential mortgage credit risk. This is an immense amount – by comparison, the entire deposit base of all the FDIC-insured banks in America is only about \$13 trillion.<sup>2</sup> But the two companies had little choice: they were consciously designed by federal law to be such monolines, period, unable to diversify.

Many consider it a major public policy defect to have such monolines, which include not just the two GSEs but also a range of other specialty residential finance institutions, such as the Federal Home Loan Banks, the Federal Housing Administration, the “thrifts” and others.<sup>3</sup> Seen through the lens of systemic risk worries that became front-and-center in financial regulation after the 2008 Financial Crisis, in which initial problems at some financial institutions were transmitted to and amplified by others, large monolines make zero sense – in fact, having them is backwards and even arguably dangerous to the stability of the financial system. Ensuring that banks and financial institutions, especially the largest ones, are diversified in the risks they take is in fact regarded as one key design feature of a stable financial system, since a diversified institution can much more easily absorb distress in any one asset class. It is totally obvious, in retrospect, that all of these mortgage monolines would be weak *at the very*

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<sup>1</sup> This includes both single-family and apartment house (or “multifamily”) mortgages; the former comprises the vast majority of GSE assets, and is the overwhelming concern of the policy community. I will write about multifamily mortgages at a later date, as it is still a very large asset class in its own right with important implications for people who can’t afford a mortgage and so live in rental housing.

<sup>2</sup> As a further comparison, the largest US bank by assets (including foreign assets) today is JPMorgan Chase, at \$2.7 trillion. It is, of course, highly diversified into both US and foreign banking activities, specifically most types of US consumer banking plus a broad range of business and capital markets banking globally.

<sup>3</sup> Thrifts are comprised mostly of savings and loans associations and mutual savings banks, which historically had been required to have a very high percentage of their assets in housing and real estate-related loans and investments. This makes them near-monolines.

*same time*, and a source of financial instability given how large they are, if the mortgage asset class ever came under heavy stress.

It should be noted that many people in the housing finance community historically supported, and still do support, the concept of these large residential mortgage monolines. Some predictably do so because their careers or revenues are tied to them. But apart from these vested interests, there is a policy basis for supporting them: the monoline structure more readily enables the government to target the residential mortgage asset class very specifically for support, subsidy, policy analysis and development, and some aspects of controlling risks, and these benefits are valued by many. Unfortunately, on a political basis, the monoline structure also produced a concentrated target upon which special interest groups could focus their lobbying efforts, which may be one reason such efforts are regarded by many as, unfortunately, having been so effective.

The “canary in the coal mine” for this concentration of risk being problematic was the 1989 Thrift Crisis (also known as the S&L Crisis), which cost the US government a reported \$130 billion. In this case, the underlying cause of the thrifts’ distress was mortgage-related interest rate risk. They made 30-year fixed-rate mortgages, funding them with short-maturity savings deposits. When inflation, beginning in the 1970s, caused interest rates to go up, the thrifts were required to pay more and more for those savings deposits (or, if they lost them, for replacement funding), with no similar ability to raise the rates on their large book of fixed-rate mortgages. The result was losses in very large amounts. Many thrifts, to help offset the losses, went into risky activities,<sup>4</sup> many of which did not turn out well – spectacularly so in some cases – and thus piled more losses on top of the original ones. In the aftermath of the crisis, there was surprisingly little media or policy focus on the folly of the lack of diversification of these institutions; instead, the focus was concentrated on interest rate risk issues,<sup>5</sup> and those risky activities. So, monolines as an acceptable idea just kept rolling along.

However, in the 2008 Financial Crisis, all those coal-mine canaries went into cardiac arrest when the mortgage asset class became so incredibly distressed in terms of credit losses. And because the GSEs were so big, with their liabilities (i.e., the mortgage-backed securities and debt they issued) held in large

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<sup>4</sup> Thrift charters at that time, including how the then-existing regulators gave approvals under them, allowed an unusually large degree of discretion by thrift managements in moving into risky activities, some not very obviously related to the core function of a thrift.

<sup>5</sup> The focus on interest rate risk management – not having 30-year fixed-rate mortgage loans be financed by short-maturity savings deposits – was actually quite productive, and led to many improvements in how regulators supervise interest rate risk taking, how financial institutions manage their interest rate risks, and also how mortgages are financed. In particular, it led to the pass-through mortgage-backed security, the standard method for the GSEs (and the FHA) to finance mortgages, gaining tremendous market share versus the thrift-centric (and bank-centric) approach of buying and holding a mortgage on its books, funded by deposits or other borrowings.

amounts all throughout the already-shaky banking and financial system, their distress became another cause of global financial instability. The result was that, among many other actions, the US government took over the two GSEs via “conservatorship,” a legal status where they operate essentially as wards of the federal government, which bailed them out to the tune of over \$190 billion of taxpayer money.<sup>6</sup>

The GSEs are required by law<sup>7</sup> to be residential mortgage monolines. But post-Crisis, it became clear that they must additionally satisfy the policy objective of critically reducing the threat posed to the financial system’s stability by their multitrillion-dollar concentrated mortgage credit risk exposure. How can these apparently contradictory demands be met – how can this circle be squared? At bottom, that’s what my friend was asking while we were in the airport security line.

This is where credit risk transfer (CRT) comes in, being the only known solution to the problem under existing legislation.<sup>8</sup> But the reduction of systemic risk was not the only issue addressed by the CRT program that Freddie Mac pioneered with the first transaction in 2013. The program also targeted a second major public policy issue: the large degree of taxpayer exposure to the GSEs’ risks (see below). I have also identified no less than three other not-so-high-profile challenges that CRT can tackle that were important to me as the then-CEO of Freddie Mac as I looked for the company to perform well both while in conservatorship and, at some point, possibly after exiting it. These challenges are (1) getting good market discipline on GSE credit decisions, (2) reducing the cost of capital behind GSE guarantees for a more efficient financial system, and (3) reducing, if possible, guarantee fees below their present-day level. Each is discussed below.

In other words, CRT materially addresses no less than five separate challenges facing the GSEs, resulting in an increased resilience and efficiency of housing finance in America.

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<sup>6</sup> The federal government has since recouped its entire bailout expenditures, and is now widely considered to have made a profit on its takeover of the two companies. In fairness, taxpayers took a lot of risk in providing this support, and thus a profit is arguably very warranted.

<sup>7</sup> Specifically, the GSEs’ charters, which are federal laws establishing them and defining what activities they can and can’t do, give them a positive requirement to support the residential mortgage system and its related activities, but prohibit them from doing anything else (e.g., they can’t go into credit cards or auto loans).

<sup>8</sup> At the extreme, free market activists would call for legislation to entirely eliminate the GSEs as a way to reduce at least part of the monoline risk. Such a major policy change would require legislation that does not obviously enjoy anywhere near enough support to be passed by Congress. Moreover, this position was and still is regarded generally as extreme in the housing industry because of the predictable likely side-effects: reduced and more expensive credit to homeownership would create a downdraft in home values, which would in turn create downward pressure on the economy and a disruption to the finances of tens of millions of American families who have the biggest concentration of their net worth in the family’s house. In short, as a solution, it is largely viewed as a classic example of “throwing out the baby with the bathwater,” so there is just not broad-based industry or political support for it.

### **What Exactly Is GSE Credit Risk Transfer?**

*Credit risk transfer – often abbreviated as CRT – is a financial transaction by which the two GSEs shed their responsibility for some of the credit losses on the mortgages they guarantee onto institutional investors in exchange for compensation paid to those investors.*

*More specifically, the core business model of the GSEs is that they purchase first mortgages on single-family homes from the banks and non-banks that in turn deal directly with homeowners. As the 1989 Thrift Crisis showed, funding these mortgage purchases can be quite risky when it comes to interest rate risk – not only do they carry a long-term fixed interest rate up to 30 years, but they also offer free prepayment to homeowners, which adds to that risk. If the GSEs funded their mortgages with short-term debt and interest rates then went up, they would get squeezed on the net interest rate spread between the revenue they receive and what they have to pay, as previously happened to the thrifts. But if they funded their mortgages with long-term debt, and then interest rates went down, prepayments and refinancing by many of the homeowners would strand the GSEs with high-cost debt while no longer holding the higher-interest mortgages needed to pay for that cost, also causing losses.*

*To avoid this “lose-lose” situation, the GSEs fund their mortgages with “pass-through” mortgage-backed securities (MBS), a type of specialty bond. Specifically, with an MBS, whatever homeowners actually pay on their mortgage each month is in turn passed on (less the guarantee fee the GSEs keep as compensation) to the bond investor – hence the name “pass-throughs.” As a result, MBS investors are the ones facing the “interest rate risk” of the mortgages, including their free prepayment feature, and the GSEs have substantially shed that risk to those MBS investors.*

*The nature of the investing marketplace, however, is that the MBS investors - especially in the \$5 trillion size of the GSEs - only will take on this type of complicated interest rate risk if the bonds also do not also have embedded credit risk. (Such investors are called, in markets terminology, “rates” investors, as opposed to “credit” investors.) So, the GSEs promise the MBS investors that they will not be subject to such credit risk – i.e., the risk that homeowners default – by issuing a guarantee (with the US government supporting that guarantee, albeit indirectly) against credit losses on the associated underlying mortgages.*

*CRT comes into play when the GSEs then enter into a separate financial transaction so that, after the cumulative credit losses on their guarantee of a specific pool of mortgages get to a certain point of severity (called the “attachment point”), the investor reimburses the GSEs for those losses; when those cumulative losses reach some large amount (called the “detachment point”), the CRT investors are no longer responsible for further losses and the GSEs again will absorb them. Naturally, CRT investors get paid to take this risk: interest rates on CRT instruments are much higher than general mortgage rates, for example, and more akin to interest rates on below-investment-grade bonds.*

*The actual mechanics can be quite complicated (and will be explained more fully later), but the basics are as described above: the GSEs have “passed through” credit risk, to the degree specified in each CRT transaction, to investors in that transaction, just as the structure of MBS has allowed the GSEs to pass through interest rate risk to MBS investors. Thus, CRT in many ways is the natural completion of the vision of “GSE as pass-through entity” that began decades ago when the two companies adopted MBS as their method of funding.*

This Part I of a three-part series on demystifying CRT will address those five problems that the GSEs are trying to “solve” – or at least materially reduce – via embracing CRT as a core part of their business model. Part II will address how CRT works, including how its most common forms meet the multiple challenges needed to have a truly effective CRT program that can, among other things, critically reduce systemic risk, even in times of great market stress. Part III will address the politics and controversies around CRT, as something this big and important naturally does not escape the extreme politicization – and thus rent-seeking<sup>9</sup> – of the American system of housing finance.

### **Problem #1 – Can Systemic Risk Be Reduced? (A Major Public Policy Issue)**

As described above, the GSEs find themselves between a systemic risk “rock and a hard place” – they are by law monolines in residential mortgages with a positive requirement to support the primary<sup>10</sup> mortgage markets, but they also represent an unhealthy concentration of credit risk to the point where they could (again) be a threat to stability of the entire financial system.

CRT is the only current proven way to square this circle – allowing the GSEs to take on mortgage credit risk as part of their congressional mandate to support primary mortgage markets, but passing through much of that credit risk to investors in CRT. With two important caveats (that the credit risk is not re-concentrated, and that the CRT documentation is designed so that the risk is truly and effectively transferred and does not boomerang back to the GSEs), systemic risk will be significantly ameliorated as well because the two GSEs will have a much-reduced potential for losses. Part II will address these two caveats, which are of critical importance.

Freddie Mac introduced the first modern GSE CRT in 2013 by selling a bond dubbed STACR (for “Structured Agency Credit Risk,” with “agency” being a term that refers to the two GSEs in this case). The first such transaction was, by comparison to today, relatively unrefined. But fast-forwarding to 2018, STACR bonds had evolved to where they were providing truly effective CRT. And they do it on cumulative credit losses, for the specific pool of mortgages behind each CRT bond, that usually begin at just 0.10%<sup>11</sup> (the “attachment point”), a level meant to roughly represent routine credit losses – called “expected losses” in credit risk analytics – which represent a cost that Freddie Mac absorbs on a regular

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<sup>9</sup> “Rent-seeking” is a term from economics that refers, in this case, to special interests getting the laws, regulations or practices about housing finance inappropriately biased in some fashion for revenues and profits to be directed disproportionately to them.

<sup>10</sup> Lenders that interact directly with homeowners are called “primary market” lenders. The GSEs are considered a “secondary market” mortgage firm, as they in turn buy mortgages from primary lenders.

<sup>11</sup> For other types of CRT, Freddie Mac still uses a higher attachment point for various reasons. Fannie Mae only recently adopted an attachment point of 0.25%, coming down from 0.50%, for its CRT bond issuances.

and recurring basis like any other operating expense. Such CRT is not applied to every single mortgage purchased by Freddie Mac<sup>12</sup> – but it does apply to almost all 30-year fixed-rate ones (and others) which dominate the purchases by the company. Freddie Mac does not transfer, but keeps for itself, the credit risk on a 5% share of each pool of mortgages behind a CRT transaction specifically to make the investors buying the other 95% comfortable that Freddie Mac’s interests are aligned with theirs.

The result is that the amount of risk of the flow of *newly-purchased* mortgage credit risk retained by Freddie Mac has been reduced by over 70% (as measured by certain formulae developed by the Federal Housing Finance Agency (FHFA), Freddie Mac’s regulator and conservator). That’s a very big percentage reduction. That level of reduction, if applied to the entire guarantee books of the two GSEs, would take the credit risk on \$5 trillion of mortgages concentrated in just two companies and reduce it towards the credit risk on the equivalent of just \$1.5 trillion – a major strategic decline in systemic risk by any calculation.

To achieve this level of systemic risk reduction on the entire book of GSE business requires that the guarantee book of the GSEs fully turn over, as old loans (with little or no CRT) are prepaid or paid off and replaced by new ones (with full CRT). This process will take at least a few more years, going faster or slower depending upon how fast old loans get refinanced, but with the amount of risk smoothly being reduced via CRT every year.

The risk reduction, however, has a limit. Each CRT has a detachment point at which the STACR bond owners are no longer responsible for credit losses, and any losses beyond that cumulative point are again going to be borne by the GSEs. In conservatorship, where the company has had very little equity on its own books to absorb losses, the taxpayer is fundamentally on the hook for these “past the detachment point” losses.<sup>13</sup> The policy objective is to have that taxpayer exposure be just for “catastrophic risk” – which the FHFA defines as losses clearly larger than what was seen in the 2008 Financial Crisis.<sup>14</sup> (Post-conservatorship, it is assumed the companies would pay a fee for this catastrophic risk support by the US Treasury.) As of now, Freddie Mac uses a detachment point

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<sup>12</sup> For example, it excluded very low loan-to-value ratio mortgages that had almost no real risk to the companies.

<sup>13</sup> With the resumption of earnings being retained by the GSEs beginning in late September 2019, the taxpayer exposure is decreasing.

<sup>14</sup> This FHFA definition, at least so far, is conceptual, not mathematical. This avoids the FHFA having to pick a specific percentage of cumulative losses, as any such number chosen will become a political football, with some groups arguing it is too high and others that it is too low. At some point, however, they seemingly will have to choose a specific number.

averaging over 4.00% as a working definition of “catastrophic,” a level beyond what occurred in the Crisis.<sup>15</sup>

To answer the question, then, of whether GSE systemic risk can be reduced, the answer is a definite yes. It’s not theory at this point, as ballpark one-quarter to one-third of the credit risk exposure (as measured by government formulae) of the entire single-family mortgage book of the two GSEs has already been sold off to CRT investors. It will just take some years for the rollover of the mortgages to increase the systemic risk reduction to a much higher level, hopefully reaching 70%-plus by five or so years.

## **Problem #2 – Can Taxpayer Exposure Be Reduced? (A Major Public Policy Issue)**

Since Freddie Mac and Fannie Mae were put into conservatorship in 2008, a frequent refrain heard by people contemplating “what to do about the GSEs” has been “how do we put private capital in front of the taxpayer?” It was a question relevant both during conservatorship and afterwards, and it was asked by people from industry, from think tanks, from Congress, the administration, and more.<sup>16</sup>

The fundamental design of the GSEs was that they were taxpayer supported by a promise of the US government that their debts would be paid in full, come what may. This promise had the form of an “implied guarantee” prior to conservatorship; in conservatorship, it comes via a formal legal support agreement called the Preferred Stock Purchase Agreement (PSPA). In 2008, when the two companies were placed in conservatorship, likely credit losses overwhelmed their private sector-provided capital – putting into play the government’s implied guarantee, which was then “made good on” by the government placing the companies into conservatorship. This kept them operating and healthy enough to continue paying their debts (and to keep the housing markets, which are so important to the

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<sup>15</sup> The historic losses by the GSEs, analyzed by many housing finance community members – some doing adjustments of various types – are generally regarded as having been in the 3% to 3.50% range during the Financial Crisis. The FHFA defines “catastrophic” as anything clearly beyond that. However, the 3% to 3.50% level that applies to the whole company needs to be increased when being applied to just one specific pool of mortgages (which does not have the advantage of diversification across the *entire* guarantee book of the company). Hence, CRT at Freddie Mac today uses about 4% as the detachment point to reflect when the risk becomes so remote as to be arguably “catastrophic,” as defined.

<sup>16</sup> The people asking this question did so overwhelmingly in the context of policy proposals to reconfigure the US housing finance system to not have the two GSEs play such a central role, even to the point of replacing them. Such a change would require legislation, and no such ideas have garnered enough support to make their passage into law by Congress seem probable. The groups focused on the fundamental structure of the housing system did not focus at all on reducing taxpayer exposure while the GSEs were in conservatorship. This challenge was, instead, left to the FHFA and the two GSEs themselves, and they developed CRT as a solution.

economy, going). To accomplish this goal, the Treasury had to inject about \$190 billion into the two companies.

No one wanted a repeat of this – hence the challenge of getting private capital back in front of the taxpayer, first in conservatorship and then later (if the GSEs were to exit conservatorship and return to conventional private ownership) *in enough size that the government’s support of the companies – needed for their fundamental operation – would be called upon only in truly extraordinary and catastrophic circumstances* (again, defined as being worse than anything seen in 2008).

**During conservatorship.** There are two conventional ways for the companies to build capital on their books that would be “in front of the taxpayer”: retaining earnings and issuing new shares. In terms of issuing new shares, the problem during conservatorship is that investors have no rights (e.g., they cannot vote for members of the boards of directors), something patently unacceptable to prospective shareholders.<sup>17</sup> In terms of retaining earnings, when the companies in 2012 had begun to produce regular profits for the first time since 2008, the PSPA was revised to prohibit just that (except for a possible small reserve).<sup>18</sup> So, there would be no building up capital through either share sales or retaining more than minimal earnings.

The only possible solution was credit risk transfer – taking the credit risk that the taxpayer implicitly took on through the PSPA during conservatorship and transferring it to institutional investors (for compensation, of course) who would then be responsible for the risk, using *their* financial capacity to absorb credit losses. CRT then shrank the exposure of the taxpayer to the risk of only the remaining credit losses on the GSEs’ guarantees, which of course was the object of the whole exercise.

CRT is not the same as raising equity directly on the books of Freddie Mac and Fannie Mae, but it is reasonably close. According to the FHFA,<sup>19</sup> the two companies are reducing their need for credit risk capital on new mortgages “targeted for CRT” by over 80%<sup>20</sup> – almost 90% in the case of Freddie Mac. They have come a long way since doing the first transaction just five years earlier. The FHFA also reported that capital needed to carry credit risk, according to its formulae, was reduced by over \$16

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<sup>17</sup> Also, issuing new shares would require the government to address many issues about how it would treat the historic common and preferred shareholders along with its own ownership of senior preferred shares. The government has not been ready to do that since conservatorship began for many reasons, including political ones.

<sup>18</sup> As of September 30, 2019, earnings can again be retained up to a specific total.

<sup>19</sup> See the FHFA’s “Credit Risk Transfer Progress Report, Second Quarter 2019,” <https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/CRT-Progress-Report-2Q19.pdf>.

<sup>20</sup> In its direction to the GSEs to reduce risk via CRT, the FHFA defined “targeted” single-family loans, which exclude non-TBA and some other situations. Overall, about three-quarters of single-family loan volume is considered “targeted” by the FHFA.

billion cumulatively since the program's inception, a very material amount. The two companies also do CRT on some mortgages that are not targeted (e.g., floating-rate mortgages).

**Post-conservatorship.** If and when the two GSEs are released from conservatorship, CRT will still very much have a role to play. The companies would use a combination of equity on their own books plus CRT to support the credit risks they take on via their guarantees.<sup>21</sup> CRT would be used extensively or sparingly, depending mainly upon its cost versus the return on equity that investors will expect the GSE to earn to support a "buy-and-hold" strategy. (These issues are more fully explained below in Problem #4 and also Part II of this series of papers.)

But the history of CRT transactions in the last six-plus years of doing them is that the estimated cost of CRT has been *below* the calculated 9%–10% capital cost associated with buy-and-hold – at times, considerably so.<sup>22</sup> It is therefore a reasonable expectation that, post-conservatorship, CRT will be used to support the credit risk of the guarantees quite extensively, with buy-and-hold equity playing a smaller role than historically.<sup>23</sup> However, equity will also be required to support several other core GSE activities (e.g., the credit and market risk of mortgages while they are undergoing securitization; ditto for the pool of modified loans owned by the GSEs that result from their making good on their guarantees to investors; and the company's significant operating risks), so the amount of total equity still needed will likely be quite high (i.e., tens of billions of dollars for each company).

To sum up, CRT will reduce taxpayer exposure to the credit risk of the GSEs quite substantially both during conservatorship and, likely, afterwards. And it will be doing so on a cost-efficient basis, as described below.

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<sup>21</sup> Interestingly, after seeing what the GSEs had done with CRT, the Private Mortgage Insurers (PMIs), which guarantee risks related to high loan-to-value loans sold to the GSEs, eventually adopted just this strategy, and so now use a mix of capital on their books and CRT to absorb the credit risk of their insurance. Informally, several CEOs of PMI firms have told me CRT is lower in cost than keeping equity to support a "buy-and-hold" strategy, and so they are very happy with their adoption of CRT.

<sup>22</sup> The exact calculation of how much capital is released by a specific CRT transaction is complex, and there is no universally-agreed approach to doing so. The calculation that the cost was significantly below the 9%–10% hurdle rate from buy-and-hold was, therefore, inexact, but the calculated result was low enough that we felt confident that it would be, even if revised, still no higher than the 9%–10% range. This is an area for more development by the FHFA in terms of its proposed rule on the minimum capital required by the GSEs.

<sup>23</sup> One concern for CRT as a core business strategy is that it may not always be available should the credit markets "shut down" or demand ultra-high interest rates to take on mortgage credit risk. I will address this concern in Part III.

### **Problem #3 – Can GSE Credit Risk Become Subject to Market Discipline?**

One long-standing controversy about the GSEs is the quality of the credit risk on the guarantees they issue. Is it well-considered and reasonable, enabling responsible homeownership by so many? Is it loose and overly generous, allowing homeowners to take on too much risk of defaulting and losing their homes? Is it too tight and highly priced, preventing many people from getting the benefits of homeownership? The debate has been very predictable – left-of-center organizations would say “too tight,” whereas right-of-center organizations would say “too loose.” Interestingly, non-partisan experts at this time, given what I read and hear, are mostly in the “well-considered and reasonable” camp.<sup>24</sup>

As CEO of Freddie Mac, I frequently had to answer questions about our credit quality. I could try to explain that the quality of new guarantees (i.e., the ones made since conservatorship started) was good by pointing to statistics related to delinquencies and credit scores and loan-to-value ratios. But such explanations lacked full credibility because the two GSE management teams prior to 2008 had also claimed they had good credit quality, and then it all cratered during the Financial Crisis.

So, one thing I looked for CRT to provide, as long as we were doing it anyway for the two major public policy reasons described above, is called “market discipline.” That’s a phrase which means, in modern internet terminology, that the “wisdom of the crowd,” rather than just internal company people, would judge the credit quality of our guarantees. And in this case, the “crowd” was a few hundred large and sophisticated institutional investors that would put their money where their judgment was and buy our CRT bonds after analyzing the data provided on the performance of GSE mortgages.<sup>25</sup> And not only did those investors provide feedback on the quality of our credits, but they put a price on them each and every time a new CRT transaction came to market – turning their analysis into a buy order with a price on it.<sup>26</sup> That’s strong market feedback.

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<sup>24</sup> See for example “Managing Mortgage Credit Risk” by Mark Zandi, chief economist at Moody’s: [https://www.frbatlanta.org/-/media/documents/news/conferences/2019/0519-financial-markets-conference/presentations/zandi\\_policy-session-three.pdf](https://www.frbatlanta.org/-/media/documents/news/conferences/2019/0519-financial-markets-conference/presentations/zandi_policy-session-three.pdf). Also see, for the industry perspective, “Let’s Get Housing Reform Right,” co-authored by the heads of four housing and housing finance industry associations: <https://www.americanbanker.com/opinion/lets-get-housing-reform-right-this-time>.

<sup>25</sup> The GSEs used to keep the details of their credits and credit history confidential. However, investors will not put their money at risk without having the appropriate detailed data to analyze before making such a decision. So, as part of the change wrought by CRT becoming a permanent part of the GSE business model, starting with the very first deals, the two companies had to do a giant data release, subsequently updated, of past losses, loan characteristics, etc., so investors could do their own credit analysis work. Doing this type of data disclosure was, at the time, quite controversial among many people at the GSEs.

<sup>26</sup> Investors actually put a price on all outstanding transactions at all times, through secondary trading of STACR bonds. But those secondary trading prices also reflect market factors (like election results) and so were not as meaningful to me as the pricing of a new transaction.

As CEO, I found this market discipline – the validation of our credit quality and what we should charge to take the risk – invaluable. The simple fact is that credit risk that is only judged internally in a large financial institution – with risk of group-think, pressures to make budget and, for the GSEs, political pressures to be lax or tight – has a mixed track record, even beyond the historic GSEs. Making sure I had a broad market-based “second set of eyes” look over the credits was very comforting to me in building Freddie Mac to be a strong company.

So, CRT has put market discipline – which had been sorely lacking previously – onto GSE credit risk taking. The housing system and the broad financial system are both better for it.

#### **Problem #4 – Can GSE Capital Cost Be Reduced?**

The GSEs are – underneath all the legalities associated with having congressional charters and being in conservatorship – financial institutions (FIs) that are quite balance-sheet-intensive. Economically, that means they have a lot in common with banks or many finance companies. Such institutions are measured, in terms of success, by a wide variety of statistics, but the most important is ROE – return on equity, a good proxy for “return on risk taken.” That then begs the question: what level of ROE is “good enough?”

The answer is found in the concept of the “cost of capital.” This is the ROE that the shareholders of the firm expect to earn as a fair return on their invested monies. (Part II of this series of papers will explain this concept in more detail.) If an ROE lower than that is earned, shareholders will consider the company to have “destroyed value”; if an ROE higher than that is earned, it will be described as “creating value.” There are some standard financial analysis techniques for a company to estimate what this “cost of capital” is, although there is admittedly some art along with the science.

Today, the ROE expected by investors in large FIs like the GSEs is widely analyzed to be in the 9%–10% range, based on after-tax profits.<sup>27</sup> So, in running Freddie Mac during conservatorship, I tried to

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<sup>27</sup> For large, balance sheet-intensive FIs that deal in the mainstream of finance, the ROE expected by investors all clusters around the 9%–10% level. To the degree that one FI or another has a bit more or less risk, the amount of capital it is required to keep by the regulators is raised or lowered accordingly. FIs that are unusual in some fashion, such as taking on very risky activities, would have a higher expected return.

manage our activities so that it generated a ROE at or better than that 9%–10% range,<sup>28</sup> utilizing an estimate of the equity we would need post-conservatorship.<sup>29</sup>

On top of this, any CEO or CFO for a large FI will therefore seek to come up with the lowest cost of capital – i.e., arrange the company’s affairs so that investors’ target ROE is as low as possible.

Achieving a low cost of capital is a very big deal to the successful running of a large FI.

Proposed CRT transactions were therefore analyzed in terms of the “implied cost of capital” to absorb credit risk which otherwise would be absorbed by the company; if it was less than the 9%–10% range, it would be a good economic transaction; if it was more, it was an “expensive” transaction.

Again, Part II of this series describes this analysis in more detail.

For good financial markets reasons,<sup>30</sup> the implied cost of capital for CRT transactions was in fact expected to be under the 9%–10% range – and it was, often materially so. In my time at Freddie Mac, the average was estimated to be under 7%.<sup>31</sup> (Admittedly, markets were usually friendly to taking on our credit risk during that time.) The GSEs were thus raising risk-taking money to support their guarantees in an economically efficient manner – i.e., at lower cost.

I absolutely want to distinguish the lower cost of capital achieved through CRT from what so often happens in Washington: a government subsidy (sometimes overt, sometimes hidden) is sought to reduce the price of some product or service to make it “more affordable” to its users, when it is really just more subsidized. In terms of public policy and the interest of the taxpayer, of course, a true reduction in cost is one thing, a subsidy quite another. There is no subsidy involved here – CRT is just

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<sup>28</sup> For Freddie Mac to run at a lower ROE would be the economic equivalent of taking a hidden subsidy from taxpayers during conservatorship, as they would then not be getting a normal market return on the risk that they were taking supporting the firm through the PSPA agreement. So, even in conservatorship, generating a proper return is still important.

<sup>29</sup> The amount of such equity was determined using FHFA-developed formulae starting in 2017. They are consistent with the public proposal for a minimum regulatory capital rule the FHFA put out for comment well over a year ago, but which may or may not be revised by a new FHFA director. Prior to 2018, Freddie Mac used its own estimate, which turned out to be generally consistent with what the FHFA developed.

<sup>30</sup> These reasons relate to the economic structure of the financial intermediary that owns the credit risk. The required return on owning credit risk, as a generalization, is higher for a leveraged investor that must borrow funds and have equity to support those borrowings – such as a bank, a securities firm or a GSE. But there are many non-leveraged investors, such as pension funds or mutual funds, that do not have leverage, equity or a need to borrow funds – economically, they are just pools of assets to invest. The latter group, called “yield investors,” will usually have a lower required return on its investments than does the former group, called “spread investors.” On a related note, it is possible for the GSEs to have return requirements in the lower range of what most spread investors need (i.e., closer to, or maybe even below, the bottom of the 9%–10% range) by making their earnings unusually stable over time. If they are subject to utility-style price regulation post-conservatorship, this would likely aid making earnings more stable.

<sup>31</sup> Part II will explain this in more detail.

part of a program to be more “capital efficient,” which is a routine practice of the largest and most sophisticated balance sheet-intensive FIs. There are also no regulatory arbitrage or gaming loopholes – it is just pure economic efficiency.<sup>32</sup>

Such capital efficiency is neither just a technical matter nor just some fancy corporate finance thing. It has real implications. First, it can potentially support somewhat lower guarantee fees (see below). Second, when it comes time for the two GSEs to issue shares as part of a conservatorship exit, a lower cost of capital will make it easier and less expensive to do so as the companies will be financially higher-performing, more likely to generate an ROE at least at the 9%–10% range rather than below. And third, when the Treasury eventually sells its shares in the two GSEs,<sup>33</sup> a lower cost of capital will translate into higher prices for those shares, producing a bigger gain for the taxpayers who supported the company.

### **Problem #5 – Can Guarantee Fees Be Lower . . . Without Subsidy?**

The average guarantee fee (G-fee), which produces the core revenue stream of the GSEs, recently has been about 0.45%.<sup>34</sup> For the GSEs, single-family guarantees are their most important product and G-fees are the price on that product. Just as the manufacturer of a car or shoes has a cost to produce its products, producing a guarantee has a cost. The difficulty is in calculating just what it is.

The FHFA produces an annual review of G-fees,<sup>35</sup> and it has stated for many years how to determine their cost, at least in concept. It identifies three costs that, added up, provide a good estimate of the cost to “manufacture a guarantee.” My estimates of these three components are as follows:

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<sup>32</sup> How much of this savings would end up being given to homeowners in the form of lower guarantee fees, as opposed to being given to shareholders in the form of higher returns, will depend upon how these fees are regulated in the future, among other factors.

<sup>33</sup> Treasury has a 79.9% warrant on the equity of the companies, i.e. the right to buy that percentage of their shares for nil cost; they may also acquire additional shares, depending upon the specifics of the administration’s conservatorship exit plan.

<sup>34</sup> This number excludes 0.10% in tax that the GSEs collect on behalf of the Treasury as required by the Temporary Payroll Tax Cut Commission Act of 2011. That tax is currently scheduled to expire in 2021, but there are proposals from time to time to extend it.

<sup>35</sup> For example, see the latest FHFA annual report on G-fees:

<https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/GFee-Report-2018.pdf>

Expected credit losses <sup>36</sup>	0.05%
Plus: general and administrative costs	0.10%
Plus: the cost of capital needed to support the guarantee <sup>37</sup>	0.29%–0.35%
<b>Total:</b>	<b>0.44%–0.50%</b>

Not surprisingly, today’s actual 0.45% average G-fee is not just within the range, but near its bottom, which ensures taxpayers get a proper return on the risk they are taking even in the absence of motivation by the GSEs during conservatorship to maximize profits.<sup>38</sup>

As you will note, the cost of capital needed to support the guarantee is by far the largest component of the average G-fee’s cost. As the GSEs serve a public mission, it should be their duty to manage their affairs so the cost of capital is as low as possible, enabling them to charge homeowners as little as possible for mortgages – based upon efficiency, and apart from issues of what Congress may or may not choose to subsidize. So, with CRT providing a lower cost of capital than the common equity needed to support a buy-and-hold strategy (that’s the 9%–10% range), the average cost of capital behind a guarantee drops the more CRT is used. In the long run, this benefit should be passed on significantly to borrowing homeowners rather than fully to the shareholders of the two companies. As CRT develops over time a strong track record of working well and at low cost, how much could the average G-fee possibly decline? My rough estimate is by 0.03% to 0.04%, but it is clearly a speculative calculation. On an individual mortgage, that is a noticeable but not significant difference (on the order of the average borrower saving \$100 per year). But when you multiply it by \$5 trillion of GSE guarantees, it would – in the long term, after it was well-established and in place for some time – save the homeowners public about \$1.5–\$2.0 billion on mortgage payments each and every year.

That’s real money!

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<sup>36</sup> The FHFA document uses more formal language: “the expected costs that result from the failure of some borrowers to make their payments.”

<sup>37</sup> Again, the more formal FHFA language defines this as “the cost of holding the modeled capital amount necessary to protect against potentially much larger unexpected and catastrophic losses that result from the failure of some borrowers to make their payments in a severe stress environment.” This cost is calculated as the capital required on the average loan guaranteed (estimated from 2.00% to 2.50% of the outstanding guarantee amount) multiplied by the pre-tax equivalent of the cost of capital (9%–10% after tax, or about 12% pre-tax). A roughly-estimated extra 0.05% has been added to provide an earnings stream to carry defaulted mortgages, which are bought in by the GSEs and then become a low- or no-earning asset. (Again, this figure is very much a judgement call as it is totally unknown how big the defaulted loan burden will be in the future, especially as it is so contingent upon the health of the economy and the level of interest rates over the next decade or more.)

<sup>38</sup> For example, there are no stock awards for management, the CEO has a fixed compensation with no incentive of any kind, there is no profit-sharing program for executives or all employees of the companies, etc.

The FHFA, in working with the two GSEs to determine the right level for G-fees, did not in my time at Freddie Mac get comfortable with passing through this savings to borrowers. CRT was not well enough established (i.e., with a strong track record for years of being low-cost), and the method of calculation of its implied cost of capital was still uncertain enough that, in the view of the FHFA, it could not yet be relied upon to pass through the savings in the form of lower G-fees. But as each year goes by, that track record develops. The CRT program is now in its seventh year, and after an eventual exit by the companies from conservatorship, it is reasonable to predict that some combination of utility-style price regulation or hoped-for competition between the two GSEs will result in most of the cheapness of CRT-based capital being passed to homeowners. We will then see if the 0.03%–0.04% estimate is a good one.

This lower cost of capital and the benefits that come with it stem 100% from extensively utilizing CRT for greater capital efficiency.

## **Conclusion**

CRT may be the single biggest reform of the GSE system in the last decade in that it has fundamentally changed how the two companies manage the credit risk of their immense mortgage guarantee books of business. As described above, it has made significant progress on addressing two major public policy challenges that were otherwise festering at the heart of the financial system: reducing the extreme concentration of mortgage risk in just two companies, and getting private capital in front of the taxpayer's support of the risks of the GSEs, both in and (presumably at some future point) out of conservatorship.

Furthermore, CRT is making the GSE system of financing mortgages more efficient and, because of the market discipline that CRT transactions engender, more soundly based. Someday, G-fees may go down a little because of it.

This is not to say that CRT is a panacea, or that it does not have its issues. No system of finance is just strengths and no weaknesses. But housing finance *with* CRT is, in my view, a clearly much superior system to one *without* it.<sup>39</sup>

The FHFA, during my time at Freddie Mac, pursued a policy of encouraging many types of CRT, to avoid overly concentrating via just one structure and for other valid reasons. Unfortunately, there is no free lunch: those additional types have all come at the expense of either somewhat higher cost or somewhat less secure terms (as described and explored in Part II, to follow). And the transparency of some of these other forms of CRT can be poor, so the public can't be sure if these other types of

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<sup>39</sup> Part II will address why CRT was not adopted as a core part of the GSE business model prior to conservatorship.

transactions fully work (also explored in Part II). The FHFA should be guiding the mix of CRT transactions so that all represent good solutions – with no obvious major weaknesses – at acceptable risk and cost; to support this goal, it should establish clear criteria for what is a “good solution.”

Overall, the leadership in the mortgage industry and most of the housing finance policy community view CRT quite positively, seeing the advantages listed above and adequately comfortable that the weaknesses are modest by comparison. It is now a core component of the GSE business model, seemingly here for good.