INDUSTRY PERSPECTIVES

Four Big Things the FHFA Needs to Get Right in Its GSE Capital Rule

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Four Big Things the FHFA Needs to Get Right in Its GSE Capital Rule

And Why It Will Take Political Courage to Do So

A GSE Capital Primer and Political Economy Essay

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In February 2017, I received an email from a former high-profile financial regulator with a copy of an article he had just published. In response, I wrote back: "We are observing the politically-inspired cycle of under-regulation begetting over-regulation begetting possibly another round of under-regulation… I wish the current powers that be would just say in a speech 'We want good, professional regulation based upon sound facts and analysis. We do not want under- or over-regulation that reflects political agendas.'" I later described such non-politicized regulation to him as "right down the middle of the fairway."

This article is about the four big issues that the Federal Housing Finance Agency, the regulator of Freddie Mac and Fannie Mae, will need to address to finalize its proposed minimum required capital rule for the two giant companies, so that it is not just up-to-date with the latest thinking on risk and regulation but demonstrably also right down the middle of the fairway.

And it is about why it will take considerable courage – specifically, political courage – to do so.

The importance of this is greater than "just getting regulation right." If the two companies are to successfully exit conservatorship, the political support needed will be materially helped or hurt by whether the FHFA's capital rule is or is not generally deemed professional, credible and unbiased. So, a lot is riding on the agency's getting it right.

A Short Review of Financial Institution Regulatory Capital Requirements

Regulatory Capital in the Commercial Banking System

In 2014, when the FHFA began work on the predecessor to its capital rule (described more fully below), large commercial banks in the US were subject to three overlapping but separate calculations of required capital. They are:

- A minimum leverage ratio
- The Basel risk-based capital requirement
- The CCAR (Comprehensive Capital Analysis and Review) requirement

Because the thinking about financial institutions capital requirements for the two GSEs is dominated by commercial banking capital concepts (as the core for both types of institution is credit risk on loans), understanding these three approaches is key to in turn understanding how the FHFA developed its rule and what still needs to be done, especially with regard to the four big issues discussed below.

A minimum leverage ratio. In the immediate post-World War II era, commercial banking in the US was a simple loan-and-deposit business, usually in a limited geography. Due to this simplicity, regulation was not very sophisticated. So, when dealing with capital requirements, regulators not surprisingly used a simple leverage ratio: capital (mostly equity) divided by the total balance sheet of the bank, as measured by assets. Obviously, this calculation is not very risk-sensitive, as a $10 million US Treasury bill clearly has much less risk than a $10 million commercial loan. But it worked adequately when banking was as basic as it was in the 1950s and 1960s.

Unfortunately, as banking became more sophisticated into the 1970s and 1980s, problems emerged. One of them was that banks were shrinking their investments in low-risk assets and increasing them in higher-risk assets, like the recently developed loans to finance leveraged buyouts. This shift was, in retrospect, totally predictable. Shareholders in banks view return on equity (ROE) as a key measure of financial performance. Because a higher-risk asset generates more revenue than a lower-risk asset of the same dollar amount, while regulatory-required capital was then tied to the dollar amount of the asset rather than to its riskiness, the higher-risk asset will generate higher ROE. It's straight math – even if not necessarily wise in the long run to use it for investment decisions.

This situation of the 1970s and '80s is a reminder that bank regulatory capital systems always need to focus on two overlapping and interdependent objectives:

- *Requiring banks to have a total amount of capital such that regulators consider them to be "well capitalized" as part of being "safe and sound."*[1]

- *Calculating that total amount of capital using formulae that support economically proper incremental risk-versus-reward decision-making, so that banks are not incented to make uneconomic decisions.*

The simple leverage ratio did not address the second objective appropriately. For this and other reasons, bank regulators looked to develop something better.

Basel risk-based capital requirement. In 1988, the banking regulators of the major banking countries (the US, Canada, Japan, and many Western European countries) announced the first-ever international standard for large bank capital. It is known as the Basel Accord (and now as Basel I) after the small city in Switzerland where the Bank for International Settlements – often referred to as the central bank for central banks – is located and through which bank regulators coordinate internationally.

The Basel I approach to capital introduced the concept of "risk weight," a measure of how risk-intensive assets of different types are. Commercial loans got a 100% risk-weight, residential mortgages got a 50% risk-weight, and so on, down to obligations by the local national government having a 0% risk-weight (because "they own the printing press" for the local currency).

[1] The level of capital required to be "well capitalized" or "safe and sound" was very much a judgment call by the regulators. It did not have much science to it back in that era, before the evolution of the analytical tools, data and abundant computer power we have today. Perhaps the most easily understood rationale for a specific level of capital was developed during the 2008 Financial Crisis, when the "stress test" approach was developed; in that approach, the capital required by large banks to be deemed "well capitalized" was defined as the amount needed to absorb losses in a government-defined economic and financial "severely adverse scenario" plus a "going-concern buffer" to retain market confidence. This approach is described in more detail below.

This approach was clearly an improvement over a simple leverage ratio, but it was still relatively unsophisticated. For example, all commercial loans got a 100% risk-weight, even though a loan to a triple A-rated company is clearly less risky than one to a single B company. (Later, after the 2008 Financial Crisis, some critics blamed the 50% risk weighting on mortgages as one cause of banks' over-investing in residential mortgages, including poor-quality ones.)

As bank regulators realized the shortcomings of Basel I's relatively crude risk-weight categories, they made incremental improvements over time, with a major revision known as Basel II in 2004. In this revision, among other improvements, the largest banks had to do mathematical modeling of the risks of their specific assets, using a modeling approach specified by the regulators. This modeling was designed to avoid the historic problem of improper incremental incentives: the hope was that modeling on an asset-by-asset basis would reliably incent economically unbiased risk-reward decision-making.[2]

It all seemed very sophisticated and advanced – until the 2008 Financial Crisis, when it all seemed to crumble and look like a failure, with lots of embarrassment to go around among the regulators, who had been made to look quite bad (or, to those with certain political views, to look like they were in the pockets of the big banks).[3]

In response, Basel III was issued in 2010 (with more incremental improvements made since). But in America, at that time, it seemed secondary in its impact to a new approach, developed in the heat of the financial crisis.

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[2] The Basel rules require the largest banks to do such modeling, and then to use the higher of the results versus their standard approach, which is used by smaller banks and reflects a lot of the original and oversimplified risk-weights of the original Basel I. As things have developed, for the largest American banks the higher number is currently the old, simplified risk-weights, so risk-reward decisions may very well be incented to be uneconomic again.

[3] One specific defect of which the Basel system was accused at that point was that the banks were biasing their modeling to generate as low a number as possible. See below for more on this topic.

Stress Testing and CCAR. In the 2008 Financial Crisis, the markets lost confidence in a rolling series of financial institutions, including some of the largest banks, both in the US and globally. To re-establish market confidence in America's large banks, the US government, with Treasury and the Federal Reserve leading the way, announced in early 2009 a new approach to determining a minimum capital requirement for the large banks: there was going to be a calculation for each large bank of how much it would lose under a government-defined "severely adverse scenario" for the economy and financial markets. The government then calculated how much capital each large bank needed to be able to cover the loss from that scenario and added to it another amount of capital to maintain market confidence (usually called the "going-concern buffer," which is very much a judgment call by the regulators). This approach is usually referred to as a "stress test." Importantly in terms of restoring confidence at that time, if a large bank did not already have the required amount of capital, Treasury promised to inject it into the bank to make up for the deficit.

It is general opinion now that this approach was a major component of successfully re-establishing full market confidence in the largest American banks. The approach was then institutionalized, to be performed annually for large banks under the name "Comprehensive Capital Analysis and Review" (CCAR, pronounced see-car), via the Federal Reserve.

And so there were and still are, for better or worse, three simultaneous capital requirement calculations for the largest banks. All must be closely attended to by the regulated banks, as at any point the highest of the three is binding upon them. In fact, whereas in the years immediately after the Financial Crisis the focus was heavily upon the stress test approach, since then the emphasis by the regulators has become more balanced between that and the Basel risk-weighted one.[4]

[4] The two approaches are also becoming more integrated, as the stress test "going-concern buffer" for banks is measured by the regulators utilizing capital ratios that include Basel risk-weighted ones.

Regulatory Capital in the Specialty Mortgage System

Starting in the Great Depression, the US government created what is in essence a separate, or "parallel," banking system to direct funding disproportionately to residential mortgages, as housing and homeownership was regarded as so important both economically (being about one-sixth of GDP) and politically (relevant to every family and in every congressional district). This system over time grew to include the Federal Home Loan Banks, Fannie Mae and (much later) Freddie Mac, the Federal Housing Administration (along with its securitization agent Ginnie Mae), and of course the "thrifts," the thousands of savings & loans (which are banks in all but name, with the proviso that their assets must be concentrated in housing and real estate-related activities) and mutual savings banks (ditto), as well as some others.

Congress also created specialty mortgage regulators for these specialty institutions. These included organizations such as the Federal Home Loan Bank Board (FHLBB), the Office of Thrift Supervision (OTS), the Office of Federal Housing Enterprise Oversight (OFHEO), the Federal Savings & Loan Insurance Corporation (FSLIC), and others. If these names seem unfamiliar, that's because Congress eventually eliminated all of them due to their having proven to be inadequate regulators – so inadequate that resulting problems (like the 1989 Thrift Crisis) destroyed their credibility, thus generating political pressure to replace them with something hopefully better. Today, the functions of those organizations have either been merged into the mainstream commercial banking regulators (e.g., the FSLIC was merged into the FDIC) or collected into the sole current remaining specialty mortgage regulator, the FHFA, which dates only from 2008. (I plan to write about this history in a future article.)

A prime weakness attributed in congressional hearings and reports to these now-defunct specialty mortgage regulators was that they maintained insufficient capital requirements – requirements even lower than those applied to commercial banks at the time, which are today regarded as having already been too low.

This under-regulation is widely considered to have been a result of political pressures and lobbying. Given that housing accounts for roughly one-sixth of US GDP, and is so important to virtually every family in every town and city in the country, one can understand how "helping homeownership" is a powerful force in Washington.

And this under-regulation and under-capitalization went on for decades. For the two GSEs, it is perhaps best symbolized by the capital requirement prior to the 2008 Financial Crisis of just a simple leverage ratio of 0.45%[5] of outstanding mortgage guarantees – a level today regarded as laughably low, easily less than one-fourth of the level that would now be considered appropriate.

The FHFA, in constructing a new regulatory capital requirement, therefore knows that it cannot rely upon re-establishing the pre-conservatorship simple leverage ratio of 0.45%, and it knows how large banks are now subject to capital requirements heavily revamped since the 2008 Financial Crisis – not just via Basel III but also via the new stress test approach represented by CCAR.

A Summary of the Politics of Regulatory Capital

I have found there are three key intersections between politics and regulatory capital issues for financial institutions generally and specialty mortgage companies like the GSEs in particular. They are very relevant because the FHFA, in issuing its final rule, will definitely be concerned about achieving a critical level of credibility with both other financial regulators and Congress.

> *Interest groups always challenge regulatory capital requirements.* The track record is consistent and long – whenever a regulator puts out a new or increased capital requirement, one or more interest groups will complain it is too burdensome (including,

[5] There was also a higher simple leverage ratio on mortgage assets held for investment – i.e., separate from the guarantee book – of 2.50%. Additionally, there was a risk-based capital requirement, but it produced numbers usually lower than the simple leverage ratios, so the leverage ratios were the ones that mattered.

of course, the regulated firms themselves), often quite creatively justifying their obviously self-serving position as somehow "good for America." It's just part of the usual give-and-take inside DC for many reasons, including because higher capital requirements translate into lower ROE, which reduces stock prices and executive compensation. In this case, the two GSEs – under government control via the conservatorship – will not be free to publicly complain, a change from the usual pattern. But I predict others will. Housing industry special interests – both commercial ones, such as homebuilders, realtors and mortgage bankers, and community groups that advocate for greater levels of homeownership, especially among historically disadvantaged communities – will likely claim that the requirement will make homeownership more expensive than it needs to be; mortgage insurers, who fear their capital requirements could well be raised to equal that of the GSEs, will say it is too much; and so on. There is no way around this dynamic. At the extreme, such groups go to Congress to try to get legislation to override the regulators. With $5 trillion of mortgages on the GSEs' books, there is just so much potential economic impact that many groups will be highly motivated to challenge whatever comes out as too high.[6]

Members of Congress will challenge the capital requirement. One outcome of the 2008 Financial Crisis is that the credibility of the financial regulators – from the now-defunct predecessor to the FHFA all the way up even to the Federal Reserve – was damaged when it came to setting capital requirements. So, when the FHFA puts out its final rule, it should expect to face critical comments from members of Congress, including those in

[6] Challenges of this type can also be *indirect*, focusing on expanding and loosening the definition of what counts as "capital." Prior to the 2008 Financial Crisis, the definition of "capital" had successfully been lobbied to be loosened in the banking system, spawning a host of interesting hybrid financial instruments. Based upon what actually happened in the crisis, the regulators reversed direction and cracked down on this type of loose definition. They are now mostly focused on "Common Equity – Tier 1" (CET1) as the main definition of capital for most capital ratio calculations. The rationale is that the looser and weaker forms of capital did not retain market confidence during the stress period of the crisis. In the capital development work done by the FHFA that resulted in their proposed capital rule, it was assumed that capital was either CET1 or something very close to it. Comments from certain interest groups on the proposed capital rule did naturally include suggestions to loosen the definition of capital, up to including some guarantee fees to be received in the future. If such loosening were to occur, then the numerical ratios of the rule should be mathematically increased to account for that loosening; otherwise, it would be just another method, albeit disguised, of reducing capital requirements.

positions of significant power, such as committee and subcommittee chairs. All involved elected officials will pay the usual lip service that they want a strong level of capital and do not wish to return to the undercapitalization of the past, but within that general sentiment there can be a wide range of specific views. Pro-GSE elected officials will tend to be concerned that the proposed capital requirement is too high, improperly reducing homeownership opportunities; GSE-skeptic officials will tend to be concerned it is too low, setting up a possible future financial collapse. And the interest groups doing lobbying will exacerbate it all.

There will be undue focus on the minimum leverage ratio. As summarized above, large banks are subject to three separate and simultaneous capital requirements. But the reality is that both the Basel risk-weighted and the Federal Reserve CCAR stress test approaches are complex and hard to understand. So, I have observed firsthand how elected officials and interest groups have tended to summarize their views in terms of the simple accounting-based leverage ratio. It's easy to state in a way easily understood by the media and constituents. The current regulatory requirement for large bank holding companies is 5%. In 2018, Representative Jeb Hensarling, then chair of the House Financial Services Committee and regarded as a Tea Party-aligned Republican, proposed bank regulation legislation with a 10% leverage ratio as its core. For the GSEs, when Senators Corker and Warner were developing major bipartisan reform legislation in 2014, the proposed bill called for a simple 10% leverage ratio as the capital requirement.[7] Given that it has long been understood that the leverage ratio is just not adequately related to risk (hence the risk-based Basel and CCAR approaches were developed), it is amazing to me how much of the dialogue in DC is still centered on the accounting-driven leverage ratio.[8] As will be explained below, this misguided focus will be particularly problematic for the FHFA.

[7] Senator Corker, in a meeting I attended, when told by his staff that historic loss statistics called for a level of between 3% and 5%, responded: "I need 10% for my caucus."

[8] There is a totally legitimate usage of the simple leverage ratio, as defined and approved through the Basel process, as a "back-up" ratio. This is discussed later.

So, no matter what it comes out with, the FHFA will face political criticism and pushback that its proposal is simultaneously too low and too high, and with too much reference to just the leverage ratio. Hopefully, then, the FHFA will develop a capital requirement that is "right down the middle of the fairway" and thoroughly reflecting the latest concepts of risk and regulation, enabling it to strongly defend its position as based on unbiased facts and the best thinking of the regulatory community. Convincing a core of professional and non-politicized observers to support the regulation is key to FHFA credibility, and also to defending against the pushback from political or industry sources.

The 2017 Conservatorship Capital Framework

As explained above, a set of capital formulae – concerning how much capital is needed for various types and amounts of risk – is needed for a financial institution to make proper economic decisions that trade off risk versus reward. For example, how much extra does the interest rate on a riskier loan need to be worth the extra risk? Or, does selling off an investment make sense because the reduction in profit is small relative to the capital released by the sale? These kinds of decisions are made every single day in a large financial firm, including the GSEs.

The problem was that, as conservatorship began to focus less on the foreclosure crisis and more on regular going-forward business in 2011 through 2013, there was no valid regulatory capital system on which to base such decisions. The pre-conservatorship 0.45% had been suspended upon the companies' entering conservatorship (in which the US Treasury's support agreement, the Preferred Stock Purchase Agreement (PSPA), replaced the need for capital on the books of the companies to retain market confidence), and was non-credible anyway as clearly being way too low. So, facing the vacuum, each GSE made up its own capital formulae to guide decision-making. The results were, first, inconsistency between the two GSEs (e.g., one saying that selling a certain asset was appropriate, and the other saying that selling that very same asset was not); and, second, a lack of confidence that decisions would be

economically proper if the capital system each used was not itself well-constructed and reflective of up-to-date (i.e., post-Financial Crisis) thinking.

Freddie Mac Pioneers A New Approach

Soon after arriving at Freddie Mac in 2012, I learned about the capital formula being used by the company in the absence of any direction from the FHFA. It was better than the suspended 0.45% requirement, but it was clearly inadequate relative to the post-2008 thinking from the bank regulators, where the stress test administered to large banks by the Federal Reserve was based upon a 25% decline in house prices.

Also, shortly after my arrival at Freddie Mac, the CEO of one of the newer mortgage insurers came to introduce himself, and stated how his company's risk analysis was very conservative – because it was based upon an adverse scenario with a reduction in house prices of 10%! This was indicative of how mortgage industry thinking was behind the curve of the larger financial system – 10% down for house prices versus 25% is a rather major difference – when it came to stress testing and concepts of proper capitalization.

So, given my banking background and orientation, I directed that our capital formula be upgraded to be consistent with what applied to the largest banks (i.e., the SIFIs – systemically important financial institutions) as measured by the stress tests applied to them.

Then, through 2013, I heard many reports from my colleagues about how inconsistent many capital-intensive actions in the marketplace were between Fannie Mae and us. In the spring of 2014, at regularly scheduled update meetings with the then-new FHFA leadership team, I reviewed the inconsistencies, and made the case that even in conservatorship a capital system was still needed to drive decision-making. Because the FHFA's people unsurprisingly had backgrounds in housing and mortgage finance, they had not until then been focusing on this aspect of the conservatorship.

The result was that, in mid-2014, the FHFA told the two GSEs that it would be developing a consistent, up-to-date, risk-based capital system that the companies would be required to use for decision-making while in conservatorship. They hired Oliver Wyman, a consulting firm with extensive expertise in the field, to help them develop up-to-date principles for this system. And then they began the work that created the Conservatorship Capital Framework (CCF), which was implemented in May 2017.

Not surprisingly (and with some simplification), the underlying principles that came out of the consulting assignment were based heavily upon the CCAR stress test approach: they required capital on each asset reflecting what could be lost in a severely adverse stress scenario plus a going-concern buffer to retain market confidence. The basis for the new requirement was the Federal Reserve's CCAR severely adverse scenario of a 25% reduction in house prices. The CCAR-consistent approach was then applied to each specific type of mortgage on the GSEs' balance sheets, dozens of them, to customize in detail how much capital was needed for each, based on historic loss data provided by both companies to the FHFA.[9]

The result was not much change for Freddie Mac, since we had upgraded to this approach back in 2012 and 2013. But for those still utilizing more traditional mortgage industry thinking, it was a bit of a shock.

The CCF has since been updated by the FHFA from time to time with the latest economic analysis and regulatory thinking. The two GSEs are in their third year of using it for their decision-making, which is now consistent between them as well as reflective of good risk-reward economic analysis. The framework has therefore been considered a success by the FHFA (and I agree). It presumably will remain in place until conservatorship ends.

Given the CCF's effectiveness thus far, the FHFA decided to make it the basis for its formal regulatory minimum capital rule.

FHFA's Proposed Capital Rule and the Big Four Issues to Address

The unusual situation of long-term GSE conservatorship led to an equally unusual consequence: the FHFA decided to develop a formal regulatory minimum capital rule, *even though it would*

[9] For the GSEs, as monolines with almost all their credit risk in residential mortgages, the key requirement of a capital system is to distinguish between mortgages with more or less risk in fairly great detail. The original Basel risk-weight concept, where all mortgages were treated as having the same 50% risk-weight, was just not appropriate to the situation.

not apply to the companies while they were in conservatorship, but only afterwards – assuming they ever came out of it in some similar corporate form.

They did so for two reasons. First, after getting feedback via the public comment period to fine-tune their proposal, the FHFA would officially put a marker down of how much capital would have to be raised for the companies to be able to stand on their own and thus qualify to exit conservatorship. (It was a classic chicken-and-egg situation: if the FHFA didn't develop a capital rule while the companies were in conservatorship, no one would know how much capital was needed to ever get out of conservatorship!) Second, it allowed the FHFA to educate policymakers – including Congress – about what a proper regulatory capital system should look like, given the long history of over-reliance by many on simple leverage ratios.[10]

So, in July 2018, the FHFA put out for public comment the proposed minimum required capital rule for the GSEs. The proposed rule included the CCF detailed formula for calculating required capital by each asset type to reflect a risk-based approach (which was a hybrid of the Basel approach and the Fed's CCAR), and also a separate leverage requirement. (CCF did not have the latter; it was a purely risk-based system.)

For an official federal government rule to be finalized, there is a process set by the Administrative Procedures Act that requires a public comment period after a proposal is published in the *Federal Register*, and then finalization with any revisions made but also to include summaries of what comments the agency received and why it made the choices it did after receiving them.

The comment period for the FHFA's capital rule ended four months later in mid-November. The FHFA, at the working staff level, then went through the painstaking task of

[10] Almost everyone I talked to on the topic agreed that it was not a good idea to let Congress develop an approach in a vacuum, believing the legislative "sausage making" process would too likely produce something poorly done, very possibly with all sorts of bad decision-making incentives built into it. The alternative, Congress's deferring to the FHFA as the regulator, was felt to be more likely if the FHFA actually put a stake in the ground indicating what its capital requirement would actually be.

reviewing all 80 comment letters received, doing the necessary follow-up analysis, and finally making a recommendation of how to proceed. This work ended in early June of this year, seven months later, and then the new leadership of the FHFA – in place just two months at that time – began its process of deciding what to do.

They are still at it.

Tough Decision #1: SIFI-Same or SIFI-Consistent?

As already stated, the leading thinking about capital for the GSEs, as reflected in the CCF and then in the risk-based portion of the proposed minimum capital rule, started with what the Federal Reserve applies to SIFIs – systemically important financial institutions – in their stress tests. And Freddie Mac and Fannie Mae – with total assets of $2 trillion and $3 trillion, respectively – are clearly big enough to be considered systemically important. So, why does the FHFA not just apply the capital regulation used for SIFIs directly to the GSEs – no muss, no fuss, easy to do?

Well, the answer starts with the fact that all current SIFIs are banks. Banks have certain risks and thus need capital to support the risks they take. For a period of time, two large insurance companies (AIG and Prudential) were also SIFIs. What is not well known but very relevant is that the Federal Reserve did not apply its standard, bank-centric capital formulae to them because insurance companies are obviously not banks, and have different types and amounts of risk.[11] Instead, it ran a more informal system, having chosen to not develop a formal insurance company-centric capital system during the short time those insurers were treated as SIFIs.

[11] This was confirmed to me by the former CFO of one of the two insurance companies. More recently, the Federal Reserve put out for public comment a proposal of what capital rules would apply to insurance companies, as some SIFI banks have major insurance subsidiaries. It confirmed that what are known as SIFI capital requirements are really SIFI-bank capital requirements, and apparently only used by the Federal Reserve for banks.

A GSE is Not a Bank!

A bank, at its heart, not only takes deposits but in terms of capital to support its risks is generally defined as a financial intermediary that takes on three types of risk: credit risk, liquidity risk, and interest rate risk*, a type of market risk.*[i] *It must have the capital to support its ability to pay back its depositors and other funders on time, in full, regardless of what else happens on its balance sheet (such as credit defaults or some depositors withdrawing funds unexpectedly quickly or interest rates going way up or way down). That is obviously a large amount of required capital because so many risks must be guarded against.*

But the GSEs do not have the same risk profile as banks – not even close!

Liquidity and Interest Rate Risk*. Banks intermediate*[ii] *liquidity and interest rate risk on fundamentally 100% of their balance sheet – in fact, that's one of the core things banks do. By contrast*, GSEs do not do such intermediation on about 85% to 90% of their entire balance sheet *– because that very large percentage consists of mortgage loans, purchased from primary market lenders, funded by "pass-through" mortgage-backed securities (MBS). Specifically, the investors in those securities accept that they will get paid the principal and interest due them only when the underlying borrowing households pay the monthly amounts due on their home mortgages first to the GSEs. (That's where the name "pass-through" comes from.) In other words, the GSEs do not intermediate liquidity and interest rate risk on almost their entire balance sheet, whereas banks absolutely do so. Compared to banks, then, GSEs need very little capital to support interest rate and liquidity risks.*

Credit Risk. *Because the GSEs* do *guarantee the MBS investor that the credit of the underlying loans will be good, capital required by the GSE for that credit risk should be the same as that for SIFI banks on the credit risk of their mortgage assets.*[iii] *(Since the FHFA's capital rule is based upon the same economic and financial severely adverse scenario utilized by the Federal Reserve, that equivalence is built into the proposed capital rule.) But the similarity is breaking down due to the invention of credit risk transfer (CRT).*

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i. *Other types of market risk, as well as the "operating risk" that a bank generates by doing all its activities, are not immediately relevant for this discussion.*

ii. *"Intermediate," as a verb, is used in banking to denote the situation where a bank (or other financial institution) takes in liabilities with certain risk characteristics but uses the cash generated to hold assets with different risk characteristics. So, if short-maturity deposits are taken in and used to finance long-maturity loans, the bank is said to "intermediate liquidity" because the maturities do not match. If the deposits have interest rates which change frequently, but the loans have long-term fixed rates, the bank is said to "intermediate interest rate risk." And it intermediates credit risk on virtually its entire balance sheet, since the bank promises to pay off its deposits and other liabilities in full and on time regardless of the credit performance of its loans or other investments.*

iii. *There is an argument the banks should have a bit less capital than the GSEs, because they are diversified across many asset classes, where the GSEs are by law monolines concentrated in just residential mortgage credit risk. It is unclear how much that diversification benefit should be, so it is currently more a theoretical than measurable adjustment. It is an area for potential further research by the regulators.*

Beginning in 2013, Freddie Mac pioneered GSE credit risk transfer, in which it sold additional securities to investors so that they, instead of the GSE, would absorb certain credit losses that the company would otherwise incur from its guarantee to the MBS investors. CRT has grown significantly since, and the FHFA requires both GSEs to undertake it extensively during conservatorship. In aggregate then, for new mortgage loan purchases, the GSEs are laying off to investors about 60% to 70% of the incremental capital required for credit risk. Therefore, while banks generally keep 100% of the credit risk of their booked loans (and other assets), requiring the capital that can support it, the GSEs are doing so less and less (i.e., they are now "passing through" much of their credit risk in a fashion similar to how they have long passed through interest rate and liquidity risk). So, again, less capital is required than for a bank holding the same asset on its balance sheet.[iv]

Conclusion: A GSE has much less risk per dollar of asset than a bank does, and so needs much less capital per dollar of asset.

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iv. *CRT has been developed to be oriented towards actual economic risk reduction, and overwhelmingly does not remove the mortgage loan asset from the balance sheet according to Generally Accepted Accounting Principles (GAAP). This is not to be confused with many pre-2008 commercial bank transactions that were oriented towards accounting treatment of what is or is not on the balance sheet, as opposed to actual economic risk reduction.*

Since the GSEs have, like insurance companies, a different business model than do banks, with different types and amounts of risk, it makes no sense to directly apply bank-centric SIFI capital formulae to them (see the box above).

What does make sense is to use the Federal Reserve's bank-centric formula as a starting point from which to get to a goal: *a GSE should have the same amount of capital as a SIFI bank for the same amount of risk*. For credit risk, the GSEs should be able to pass the SIFI stress test: a GSE should have capital sufficient to absorb a severe adverse economic scenario (in this case, house prices down by 25%, among other things) plus a "going-concern buffer" (as estimated by the regulator) to retain market confidence. This approach is *exactly* what the CCF formulae are based upon. Since the risk-based portion of the proposed GSE capital rule replicates the CCF system, it is truly "SIFI-consistent" (i.e., the same capital for the same amount of risk, all as defined by the stress tests).

Since the GSEs are engaging in CRT to more and more reduce their retained credit risk, the amount of capital required for consistency with SIFI banks is continually declining. So, the FHFA proposed capital rule, in terms of its risk-based formulae, is fundamentally SIFI-consistent, but not SIFI bank-same, for the obvious reason that GSEs are not the same as banks. In its final capital rule, the FHFA will have to clearly declare just that, with conviction and the rigorous analysis to back it up.

Tough Decision #2: The Leverage Ratio as Backup – and Simple or Bifurcated?

As described above, the classic leverage ratio was the main method of capital requirement regulation for banks prior to Basel I in 1988. Subsequently, however, it was kept – the bank regulators just hate to give up a tool – but in practice it took a back seat to the risk-weighting approach of Basel.

So, why did they keep it?

What, indeed, does the leverage ratio measure? Clearly, a $10 million US Treasury bill and a $10 million corporate loan do not have the same risk – so the leverage ratio clearly does not measure credit risk. Before the 2008 Financial Crisis, I recall it being referenced by some as an indirect way to control liquidity risk – banking regulators did not want too many deposits or other funding sources to be supported by too small an equity base, lest there be too much risk of a loss of confidence and thus a "run" in some fashion. (And indeed, all the Basel regulatory focus previously seemed to be about capital, not liquidity.) So, there was a need for the leverage ratio to fill the vacuum left by Basel's not adequately addressing liquidity (to its eventual regret in 2008).

But in the post-Financial Crisis era, regulators around the world recognized their inattention to liquidity standards to match the rigor of the Basel effort at capital standards. And liquidity rules were then developed that are far more accurate than a crude leverage ratio. In

addition, as GSEs are overwhelmingly (i.e., 85% to 90%) funded by pass-through MBS (almost fully eliminating the liquidity risk), there is even less reason to use a leverage ratio as a proxy for liquidity, as it is just massively inaccurate.

Some people pointed out that, with the biggest regulated banks doing the specified modeling in Basel II, as required by the regulators, the Basel capital rules could be manipulated via that modeling. And there is some evidence that came out after the Financial Crisis that banks were, if not biasing the estimate of required capital downwards to make themselves look like they were earning higher returns on capital, at least highly inconsistent between them in their estimates of capital required for identical risks.

So, there is a totally legitimate notion that there should be a "back-up" leverage ratio to catch the situation if the Basel modeling approach somehow starts producing numbers suspiciously too low for required risk-based capital. That figure was agreed to be a 3% ratio through the Basel coordination process among bank regulators of the major countries. It's quite reasonable and makes sense for large banks*. In summary, going forward, the official, Basel-sanctioned proper role for a simple leverage ratio is to act as a back-up to, and not the primary driver of, regulatory capital requirements.*

But in the US, the decision was made to add a substantial premium to the 3% – and for the largest banks the minimum leverage ratio became 6% (and 5% for their parent bank holding companies). This decision has become controversial for two reasons. First, it opened up a big gap in consistency between the US and the rest of the Basel countries, and that gap runs counter to the original idea of Basel coordination. Second, it has no real economic justification behind it. In fact, the 6% is so high that it could be from time to time "binding," meaning it would be the highest number of the three approaches to capital calculation – becoming the primary driver in direct contradiction to the Basel agreement. If that were to happen, it would be like being transported in a time machine back to pre-Basel I days, when the decision-making incentives were all skewed because the capital requirements were not risk-based.

This decision was attributed, by the people I have talked to over the years, to the US general political environment being strongly anti-large banks after the 2008 Financial Crisis. It is interesting to note that right now the Federal Reserve is looking to reduce the leverage ratio back (although not all the way) towards the 3% used elsewhere – an indication that the American political environment is lightening up a bit and that the US can move towards utilizing the leverage ratio in the same manner – as a back-up only – as the rest of the Basel countries.

With all this background, the FHFA proposed two alternatives:

- The classic, simple leverage ratio – capital divided by assets – of 2.5%.
- A "bifurcated" approach – a leverage ratio of 1.5% for the pass-through MBS-funded portion of the balance sheet (that's 85% to 90% of it) and of 4% for the rest (which has risk characteristics like a low-risk bank).

All these numbers are low in comparison to the 5% or 6% which apply to banks at the current time. They are clearly therefore more in the camp of Basel, i.e. using a leverage ratio as back-up only, not as a primary capital requirement that is likely to be binding frequently. This is totally professional and non-political, but the FHFA will likely get criticized for it, claiming it is too low and a "giveaway" to the GSEs.

Then there is the choice of which ratio to use. And the choice is actually very easy.

The basic fact is that the simple ratio – 2.5% of assets – totally ignores the massive risk difference between the 85% to 90% of assets which have zero liquidity or interest rate risk (i.e. the guarantees funded by MBS) and the remainder, which have a risk profile more like low-risk banks. The bifurcated approach does this – at 1.5% of pass-through funded assets and 4% for the others – reasonably well by contrast.

And then there is the legitimate concern that the leverage ratio might be initially or soon thereafter binding, which is a major issue for the GSEs. That's because it could

dramatically interfere with the program to do CRT on the single-family mortgage guarantees. CRT is critical to the improved GSE business model developed during conservatorship – about which I will write in a companion piece – and the economics of CRT is heavily driven by the reduction in the capital that accompanies the transfer of the associated credit risk. But if the leverage ratio is binding, then there is no reduction in the regulatory capital required despite the risk reduction – because the capital is tied strictly to accounting assets (CRT usually does not remove an asset from the accounting balance sheet) and not risk.

In other words, the regulation could have a massively damaging "unintended consequence" in rendering wholly uneconomic in regulatory terms the CRT program if the minimum leverage ratio is set at a level such that it becomes binding. That consequence should be avoided at all costs; in my personal opinion, it would be a public policy mistake of massive proportions, impacting how trillions of dollars of mortgage credit risk is funded and how much the GSEs represent – or not – a systemic concentration of risk. It is another reminder of how important it is to worry about the second objective of a regulatory capital system: that there is no unintended incentive to bias decision-making away from good risk-versus-reward economics.

Running the numbers at the time the rule was published for comment, neither of the two alternative leverage ratios were binding, i.e. higher than the risk-based approach. But doing basic simulations of the next few years, which included how CRT was being utilized on a greater share of the guarantee portfolio as old loans (for which there was no CRT) mature and new loans (for which there is) are booked, the simple 2.5% leverage ratio quickly became binding. And that would generate all the bad consequences of undermining CRT. For the bifurcated approach, the leverage ratio became binding several more years out, but that could be addressed by the regulator in ordinary course as circumstances demand.[12]

[12] One can also argue the 4% in the bifurcated approach is too high, given the Basel 3%. Changing this would help address the issue of when the risk-based approach would no longer be binding by extending it out even further.

So, the FHFA will need the courage to adopt anything with the specific ratios proposed, as all the numbers seem so low in comparison to those used for banks. But as they do treat the leverage ratio the proper way – as a back-up and not a primary (and potentially binding) driver of the level of capital - it is the right thing to do. Then choosing the bifurcated approach will add to potential criticism, as it goes away from the classic simple single ratio used in banking. Given the strong tendency I have seen among politicians and policy and media pundits to talk about the GSEs as if they were banks and to look simply at the accounting-driven leverage ratio, as opposed to the more complex risk-based approaches, the reaction to choosing the bifurcated approach could be strongly negative. Again, political courage is going to be required, along with strong communication of the analytics behind the decision and how the risk-based capital formulae in the proposed rule are based upon the same severely adverse scenario that the Fed uses, which is itself grounded heavily in the actual events of the 2008 Financial Crisis.

Tough Decision #3: Addressing Procyclicality – Original or Current LTV?

One of the more subtle but important challenges in developing capital systems is dealing with the economic cycle. Simply put, the risk of a bank or a GSE is not static and fixed: not only does it change as new assets are put on and old ones mature, but it changes as the economic environment around it changes. Loans to an oil & gas company are more or less risky as oil prices fluctuate. All loans are more or less risky depending on whether the entire economy is doing better or worse.

And as risk goes up and down, the need for capital to support that risk goes up and down with it.

These fluctuations are particularly significant for the GSEs. Their assets are almost all in residential mortgages – an asset class known for strong cyclicality. And given what happened in the 2008 Financial Crisis, it is now settled wisdom that house prices – which are a major factor

in the riskiness of home mortgages[13] – can be strongly cyclical, especially on the down side. By comparison, banks – with diversified types of assets, fee-generating businesses and such – are arguably far less proportionately exposed to the cycle in terms of credit loss potential (although they are far more exposed when it comes to liquidity stresses).

Unfortunately, cyclical fluctuations in house prices have effects upon capital requirements that can intensify these fluctuations: when the economy is doing well and house prices are going up, risk declines and thus so does the need for capital, whereas when the economy is doing poorly and house prices are perhaps declining, the need for capital increases, exacerbating the downturn's effects. This phenomenon is known as procyclicality: in bad times the bank or GSE needs more capital, not less.

The banking regulators have been grappling with the problem of procyclicality for some years now: whether to require banks to have capital just for current risks, or to require them to have enough capital to be well-capitalized after the occurrence of a stress environment as well. In fact, they have long decided as a general policy to require capital such that a bank remains well-capitalized after the occurrence of a stress environment, but have no well-established quantitative method for doing so. Indeed, their policy pronouncements so far have been more than a bit muddy. They say their current capital requirements are "through the cycle," which means set at a level adequate for a stress period. But they also talk about whether they should also have a countercyclical buffer (see below), which goes up and down – at the discretion of

[13] The question of what role house prices and thereby LTV played in credit risk and credit losses became politically controversial in the Financial Crisis. It starts off as common sense: a $100,000 mortgage on a house with a market value of $150,000 clearly is less risky than when on a house with a market value of $110,000. But in the case of primary residences (i.e., not vacation homes or rental properties), homeowners did not en masse abandon their homes and default on their mortgages because LTV went over 100% (known as being "underwater"), though much press commentary suggested otherwise. Instead, if the owner did not suffer an income reversal, he or she would overwhelmingly keep paying the mortgage to keep the "family home." But if the owner did suffer some income reversal (e.g., loss of a job), then the LTV very much came into play. If the LTV was low, the homeowner would often sell the house to monetize the equity in the home, and move on (e.g., renting instead); and if the homeowner for some reason defaulted on the mortgage and it went to foreclosure, the GSE backing the loan's credit would not suffer a loss. But if the LTV were high, i.e. near or over 100%, then there would likely be a foreclosure (or some near-foreclosure), and the GSE would undoubtedly suffer a loss. Adding it all up, statistically LTV became the most important variable in determining the risk of a mortgage portfolio, even though it generally only comes into play when an income reversal happens first.

the regulators – to offset the cycle (i.e., high in good times, zero in bad). And on top of this they have the stress tests, which seem to already address the issue of what capital is needed in a stress environment.

This muddiness reflects the fact that no one can predict a cycle, and that it is highly inefficient for society to require banks to sit on immense amounts of capital needed just for a once-every-generation down cycle. Providing a return on that idle capital by charging borrowers more now and during almost all years when there is no financial crisis is a very expensive insurance policy! There are multiple ways bank regulators are attempting to deal with procyclicality, but none has yet been established as "the one," and it is unclear when that might occur.

But the FHFA has little choice but to deal with procyclicality, given how strongly procyclical the residential mortgage asset class is believed to be.

Specifically, the proposed capital formulae are based upon "CLTV" – i.e., current LTV at the time of calculation. This means that in normal markets, in which house prices usually go up a few percentage points a year, the risk of mortgages and the required capital declines over time as their LTV improves (i.e., goes down). But if there is another major downturn in house prices, then the usage of CLTV will generate a major increase in capital required to carry the riskier guarantee portfolio.

The FHFA then needs to consciously develop a method of deal with this procyclicality and its impact on capital for the GSEs. Require holding lots of idle capital perhaps? And how much, specifically? Or maybe use some other approach?

In the public comments on the proposed capital rule, there developed a bit of a groundswell to address the problem differently: to use "OLTV" – i.e., the original LTV, from when the loan was purchased by the GSEs, unchanged forevermore – to measure risk and

thereby capital. Because it would be unchanging over time, the need for less capital in normal economic times and a lot more in a stress environment would seem to be avoided.

This may seem highly technical, but it is in fact a major policy issue well disguised. Would it be good or bad public policy for the FHFA to override the economically accurate CLTV as a measure of risk and use OLTV instead?

There is a simple test that developed in the Financial Crisis to address this type of question. Consider what the implications are in two scenarios: a normal economic environment and then a stressed economic environment.

Normal economic environment: In such an environment, house prices gradually rise. CLTV will continually improve on old mortgages, so the amount of capital required will modestly decline. OLTV will remain fixed, and so the GSEs would not have a modest windfall of slowly declining required capital. Conclusion: OLTV is a modestly conservative approach, and may therefore be a legitimate approach.

Stressed economic environment: In this case, house prices go down strongly. CLTV would dramatically decline on the book of guarantees, so the amount of capital required would rise significantly. OLTV by contrast will not show such an increase – it is fixed. But the test, firmly established in the Financial Crisis as perhaps the most important issue for capital, is whether market confidence would be retained in such a stress environment. And OLTV hopelessly flunks the market confidence test. There would be major accusations that the companies were under-capitalized in such an environment, and they would be correct. The FHFA would at that point be under tremendous pressure to "do something" to avoid being considered a lax or inadequate regulator, as had happened to virtually all its predecessors.

So, it is totally clear that OLTV can't be the basis for measuring credit risk on GSE mortgage guarantees. CLTV is not just the only economically accurate basis with which to measure risk and required capital at all times, but also the only one which will maintain market confidence in a stressed economic environment.

In fact, the test of the quality of a capital system is not in good times – it is in the worst times that one finds out if the system was well designed or not! And the answer here is clear. The FHFA must therefore address head-on how to deal with the strong procyclicality of the business, accurately reflected by using CLTV.

To be clear: if the original LTV alternative is adopted by the FHFA, it will be highly problematic. It will dramatically reduce the credibility of the agency (even if it makes some people happy that a problem has been defined away). It will also drive further distortion, as it will create a classic opportunity to engage in regulatory arbitrage transactions.[14]

I therefore hope the FHFA has the courage to push back against industry and other interest groups that would like to just define away the problem; it should say that current LTV is needed to measure the risk accurately, and that the resulting procyclicality can be dealt with efficiently, as discussed below.

[14] There is an additional problem with using OLTV. Wall Street has a long history of running a cottage industry to figure out the loopholes in bank regulatory capital rules, and then designing transactions to exploit them. (In the past, many of these transactions were oriented towards accounting: the goal was to get things "off balance sheet" so as to reduce regulatory-required capital when the regulators measured risk and the capital required to support it by accounting assets rather than true risk measures.) In this case, if the FHFA used original LTV in its capital system, it would create an arbitrage opportunity because market transactions would reflect the then-current LTV, and the difference between the two would create a false value difference to be exploited. I am sure, based upon my experience, that the creative financial minds on Wall Street would rise to the challenge, all to the detriment of a quality regulatory capital system.

Tough Decision #4: Addressing Procyclicality – An Approach That Can Work With CLTV

Given that CLTV is the only approach that can support a quality regulatory capital system, especially one that passes the "market confidence" test in stressed environments, the FHFA then has to deal with its considerable procyclicality, which for the record is accurately reflecting the underlying true procyclicality of the what the GSEs do. And there is no strong precedent from banking regulation to guide it, as discussed above. But there are three approaches to doing so – two from the banking system, and one very much customized to the GSE business model.

First approach: A Fixed Capital Buffer. The crude and inefficient approach would be to require the GSEs to just retain a major extra buffer of capital, period. This could be advertised as being needed for a "through the cycle" level of capital. But as stated above, this is incredibly inefficient to society – tens of billions of dollars of "insurance policy" capital would be idle, waiting to be called on perhaps just once in a generation, but requiring a return for which homeowners would have to pay every year in the meantime via a major increase in G-fees, about two-thirds to three-fourths of which are determined by the cost of capital. As a result, no one is seriously proposing this approach.

Second approach: Countercyclical Capital Buffer. The next, more sophisticated approach, talked about frequently in banking regulatory circles, would be to retain a "countercyclical buffer." This buffer is an extra requirement, established by the FHFA's judgment as regulator, that would be revised from time to time to reflect where house prices are in the cycle. For example, in good times it would be kept high, and in bad times it would be reduced, even down to zero. This approach even has the support of the Basel process for banks, but it has real problems in going from theory to practice (which Basel signals because its adoption is discretionary, rather than mandatory). (See the box below.)

The Reality of the Countercyclical Buffer Approach

In the world of bank regulation, the notion of a countercyclical buffer is the proposed post-2008 Financial Crisis solution to address issues of procyclicality in the broader banking system. The idea is that a buffer of extra capital is required in good times (i.e., recent years) but that the extra buffer requirements would be reduced by the regulators at some future time when circumstances were such that banking regulators thought they should be reduced.

It all sounds good. Except that it is all based upon how regulators will behave in the future and has never actually been through a cycle to show it works.

I see two major problems with the countercyclical buffer concept.

First, it is impossible to reliably determine where one is in the economic cycle*. In the most famous case, Alan Greenspan, then the head of the Federal Reserve, referred in a 1996 speech to the regulatory ability to know when stock prices reflected "irrational exuberance." The phrase was taken as a sign he was saying stock prices were too high at the time – but the Dow Jones Industrial Average was just under 6400, a level now considered quite low! After that misstep, he stated that it was really impossible to determine where in the cycle one was. Take today: house prices have risen strongly since they hit bottom in 2011 – are they at the peak? Or will they just move up a small percentage every year for a further unknown number of years? And if they drop a few percentage points, would that be the start of a crash, or just a small pause? There is really no way to know. And there is no mathematical formula to accurately make such predictions, either.*

Second, will there be the political will to reduce capital buffers after a big decline in house prices? *There has been no downturn since global bank regulators began seriously discussing a countercyclical buffer policy, so all they are really talking about is adding an extra capital requirement today; there is of course no track record of how or when they would reduce it. And I seriously question that they would have the political will to do so when the time came.*

Consider the recent financial crisis. The theory of the countercyclical buffer says that, if it had been in place prior to 2008, then in 2009 or 2010 the buffer would have been reduced and even eliminated. But for those of us who lived through that period, that is just not credible. The fear was palpable that further house price declines were very possibly on the way. There was massive anti-bank politicized commentary about how their loans were falsely valued at too high a level and should be written down more. The market was, at best, fragile in terms of its confidence in the larger banks. And in that environment, according to the theory, the regulators would be reducing the capital requirements by eliminating the countercyclical buffers! To me, this scenario is not even close to credible.

So, the reality is that the countercyclical buffer being considered by the banking regulators is just a higher capital level now for the largest banks (which some like for policy or perhaps political reasons) – and maybe, someday, we would see if there is anything countercyclical about it. In the GSE world, since the "cost of capital" is responsible for about three-quarters of the cost of a G-fee, that extra capital will just feed directly into higher G-fees – possibly a lot higher.

But while talk in the housing finance system about a countercyclical buffer treats it as a settled and standard technique for regulators to apply, it is most assuredly not. Basel III lists it as a "discretionary" item. And while the banking regulators in a few countries have adopted it, many are instead tip-toeing around it, including the American banking regulators such as the Federal Reserve. And that's because of the known difficulties, two of which I have discussed above, in turning the theory into a reality.

So, if the FHFA wants to adopt a countercyclical buffer approach – apparently, but not in reality, the obvious and "standard" approach – it will have to be the first American financial regulator to fully do so. It would have to address all the issues of turning a 50,000-foot-high policy generality into a specific, implementable regulation (e.g., whether to make the buffer level discretionary or by mathematical formula; what process to use in determining when and by how much to increase or decrease it; whether it should be tied to a specific measure of procyclicality, and so on). It would also have to face the pushback resulting from the policy's impact on G-fees, which would appear punitive.[15] On top of this, they will have to explain how this unproven technique will actually work in a downturn – which will be a credibility challenge for all the reasons listed above – as opposed to just being an excuse for higher capital requirements today.

[15] The Federal Reserve states that it cannot see any increase in the cost of consumer or business credit based upon the very large increases in capital it has required since the 2008 Financial Crisis. This claim is somewhat counter to common sense. But large banks have many lines of business, they have certain volatile revenue streams, they have fee-based businesses – so perhaps in the midst of all that one cannot discern the effect of increased capital on bank loan pricing. But for the GSEs, which are monolines in guaranteeing credit, it will not be possible to avoid such a linkage: increased capital will flow directly into an increase in G-fees, of which the cost of capital comprises between two-thirds and three-fourths.

Third Approach: Increasing CRT-Detachment Points. But there is an approach that can reasonably efficiently not only continue to use CLTV, but directly reduce, in a major way, procyclicality at a very modest cost.

Procyclicality in a CRT-based GSE Business Model

In discussions earlier in 2019 between Freddie Mac and senior FHFA staff, an alternative mechanism was developed that seemed to be better constructed than the fixed or countercyclical buffer approaches. The fact is that the likelihood of a major decline in house prices, and thus of a major increase in required capital, is in reality extremely low. So, instead of keeping major amounts of idle capital around for years, maybe decades, to deal with some infrequent downturn-driven procyclicality, why not just lay the risk off to the marketplace in a way that captures its low likelihood of ever happening? That transfer of risk can be accomplished at a very small cost (maybe 0.05% or so of extra G-fee) by increasing the "detachment point" (explained below) of the CRT being routinely done on almost all the new flow of mortgages by the GSEs.

When the GSEs do a CRT transaction, in the most common cases, they specify an "attachment point" and a "detachment point"; the former is the level cumulative credit losses have to reach for CRT investors to begin absorbing those credit losses, and the latter is the level at which they stop doing so. For the current standard Freddie Mac execution of CRT in the bond markets, the attachment point is just 0.10% and the detachment point is 4.00%. This means investors, rather than the company, absorb the cumulative credit losses beyond 0.10% of principal up to 4.00%.

The 4.00% detachment point has been calculated to align with the "severely adverse scenario" defined by the Federal Reserve, which includes a 25% decline in house prices; the calculation is that this scenario would lead to a maximum of modestly less than 4.00% cumulative credit losses, which would thus all be absorbed by CRT investors. But if house prices did decline by 25%, while the CRT investors would absorb the losses instead of the GSEs, at that future point the capital formula would call for new capital sufficient to absorb another, second house price decline of 25% (plus the usual going-concern buffer).

To avoid this run-up of capital requirements – in other words, to address the problem of procyclicality – the CRT just has to be adjusted to have a detachment point of roughly 6.00%. That adjustment would prevent the run-up of capital requirements because the CRT investors would be taking on the risk of that second 25% decline, too. And it is so remote a risk when new mortgages are financed that it would not cost much: before I left Freddie Mac, a rough estimate was made that it would cost just 0.05% extra in G-fees. This is far less than what I estimate the added G-fee cost would be to provide a return on the idle capital required by the alternative approaches.

To turn this concept into a practical and implementable regulation, there are two key steps:

One - Measuring Procyclicality. The FHFA as regulator would require a specific quantitative measure of procyclicality to be implemented by each GSE. This step is actually easy given the regulatory infrastructure already in place. As a reminder, annually, the two GSEs are required to do a formal stress test exercise, based upon the severely adverse scenario established by the Federal Reserve. It is called DFAST (short for Dodd-Frank Act Stress Test), and is just the GSE equivalent to the annual CCAR stress test done by SIFI-sized banks.

Currently, the results of that stress test exercise, given that the two GSEs are in conservatorship, are reported by calculating and disclosing how much funding the companies would need from the government to avoid negative net worth under the Preferred Stock Purchase Agreement (PSPA), by which the US Treasury supports the two companies during conservatorship. To measure procyclicality, the output data from the very same stress test would just need to be reworked modestly to calculate how much of an increase in capital[16] is required by the large decline of house prices (and other factors) in the stress test.

Procyclicality would then be defined for this regulatory purpose as the percentage increase in regulatory required capital – 20% or 30% or whatever the result would be – in the official annual stress test.

Two - Limiting Procyclicality. The FHFA, as regulator, would just put out a rule, easily justified by safety and soundness, to require the reported procyclicality measure in the DFAST stress test to be no more than a certain percentage; the specific percentage would be based upon analysis to be done as part of the rule-making. (I roughly guess

[16] To do this calculation, the FHFA will have to first declare what the "going-concern buffer" needs to be in order to translate a stress test into a capital requirement. That's the one missing piece of the DFAST stress test that will be required to exit conservatorship.

that the analysis would determine the limit to be in the 10% to 20% range.) The GSEs would then have to use higher detachment points in their CRT transactions to keep procyclicality within the defined allowed percentage. (I note that an advantage of this approach is that the FHFA is not specifying the solution to the procyclicality problem, but just the required result needed. This allows the GSEs, over time, to choose the route they think best on an economic and strategic basis. Currently, as stated above, I believe that "best route" is using higher CRT detachment points, but other potential solutions should be allowed, including keeping idle capital if a GSE wants.)

This approach is not a standard one used by other financial regulators. It is grounded in the specific and narrow business model of the GSEs and the availability (in all but the worst markets) of CRT transactions to lay off credit risk. So, it will take significant courage for the FHFA to state that this new approach is the right one for the GSEs.

To me, the choice between the two likely approaches – higher detachment points on CRT, or a countercyclical buffer – is clear. The former is definitely superior – implementable, explainable, flexible, actionable, and not based upon hypothetical future decisions. It is also much more efficient, in that the impact on G-fees is comparatively modest.

Concluding Thoughts

The FHFA, in issuing a new capital rule for the GSEs, has bitten off a lot to chew. It gets to issue the first major set of rules *after* those put in place immediately following the 2008 Financial Crisis have been in operation for some years, and thus can reflect on how those immediate post-Crisis rules have performed in actuality rather than in theory. It has to customize the rules to fit the unique balance-sheet nature and business model of a GSE, which differs from that of large banks in certain key ways – a difference which, because it is somewhat complex, is liable to being ignored or misunderstood by policymakers and pundits. So it is therefore all the more important for the FHFA to communicate clearly and forcefully. It must confront head-on the

reality that the risk intensity per dollar of assets for the GSEs is much lower than for banks, and must push back against all those who want to think of the GSEs as the same as banks.

Therefore, the FHFA should spend a lot of time developing the communications around its final rule. It must convey to the public that the rule is based upon the latest regulatory thinking, SIFI-consistent, and nothing but professional, with no politics to make the capital levels higher or lower than they really should be to have well-capitalized companies as part of a total program of safety-and-soundness. It must show, in other words, that its final capital rule is right down the middle of the fairway.

Let's keep our fingers crossed they make the right choices. A lot is indeed riding on it.