IS THERE A COMPETITIVE EQUILIBRIUM FOR THE GSES?

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1 OVERVIEW

Several GSE reform proposals aim to develop a market of competitive guarantors to replace the current duopoly of Fannie Mae and Freddie Mac, based on an underlying assumption that lack of competition for the GSEs was the primary structural flaw of the mortgage market. However, before reaching conclusions about the right market structure for mortgage guarantors, the characteristics of the mortgage market should be evaluated in a disciplined way. In this paper we assess the competitive structure of the mortgage market according to well-established economic principles that are further informed by recent successes and failures. We then use this framework to explore what structures actually have the best chance of meeting society's goals.

2 ECONOMIC THEORY

In theory, competitive markets achieve efficient results without external intervention; but pure free markets often have imperfections that lead to poor outcomes if left on their own. It's naïve to pretend that unfettered competition always achieves optimal results for society, and equally counter-productive in imperfect markets to completely replace market mechanisms with external controls that eliminate the power of market incentives to achieve desired goals. Well-functioning markets offer the potential for completeness, with fair pricing, appropriate incentives and orderly markets. The success of any market structure, free or publicly intervened, should be judged on how well it achieves these objectives.

Economics provides a well-established framework to identify the fundamentals of competitive markets and the resultant benefits. (See this example.) Using this framework, market failures can be described along with their consequences, remedies and results. It's important to distinguish between failures in the **conditions** required for competitive markets and **symptoms** that reflect how competitive markets are. For example, a **symptom** of competition is the presence of many buyers and sellers who do not have market power, which is the consequence of the **condition** of low barriers to entry. Lowering entry barriers, to facilitate more entrants and more competition, might improve efficiency in a market. However, if barriers and scale economies are intrinsically large (like power companies and their infrastructure), increasing the number entrants might make the market less effective.

A variety of **conditions** contribute to the success of competitive markets; the more these are present, the more likely that competitive markets lead to efficient and desirable outcomes. Violating these conditions means that free markets will not generate efficient outcomes, and require intervention to do so. Typical symptoms of market failures are:

(i) Monopolies with higher prices and stifled innovation (US Steel, US automakers before Japanese imports)
(ii) Distorted incentives with uneconomic behavior and externalities (pollution, underpriced risk)
(iii) Market disruptions due to ruinous competition (mortgage insurers, rating agencies)
(iv) Incomplete markets (local thrifts before a national mortgage market)

The conditions required for a successful competitive market include:

- Property Rights – individuals or entities can own and control property, including financial property
- Excludability – consumers can be excluded from gaining the benefits of consumption (limited "free-riders")
- Diminishability – available supply of goods will diminish as the good is purchased
- Rejectability – conversely, consumers can reject goods if they do not want or need them
- Symmetry of information – sellers and buyers have access to similar information about the value of the product
- Accessibility (no barriers) – new entrepreneurs can enter (and exit) the market
- No Externalities – little impact on non-participants in transactions
- Immediacy (no lags) – no significant time lag between the transaction and the costs or benefits associated with the transaction

Informed by this framework, we can take a closer look at the mortgage market to see how well each of these conditions are present in the mortgage market generally and in the guarantor and securitization functions specifically.

The mortgage market is large and diverse but not monolithic. It is composed of several connected segments that include; origination, servicing, fulfillment and infrastructure, investment, and regulation and oversight. The investment function requires capital to fund loans, and bear interest rate, prepayment and credit risk. Substantial capital is also needed to establish and maintain national and global infrastructure and bear the associated operational risk. Finally, regulatory and compliance requirements have risen greatly since the financial crisis. Some segments in the mortgage market can be characterized as competitive, others clearly not. The connections between these segments suggest that determining the appropriate market structure for the functions currently performed by the GSEs requires understanding the market fundamentals of the other segments.

First, we assess how well the mortgage market generally meets the conditions for competitive markets, and then focus on particular sectors. The conditions are divided between those that the mortgage market generally meets and those where it generally fails. Regulatory intervention that addresses one failure can easily exacerbate the risk from other conditions if the linkages are not properly considered. The conditions are listed here from the most supportive to the most damaging.

2.1 Conditions Supporting a Successful Competitive Mortgage Market

1. **Property rights***:* The right to exclusively own a house and receive mortgage services, protecting them from theft or damage. Investors in mortgages generally have the right to foreclose on default mortgages. Third parties generally cannot unilaterally take houses or mortgages away from borrowers who are making their payments.

2. **Excludability***:* Consumers can be excluded from the benefits of mortgage services, that is, the ability to own a home at attractive financing rates, if they do not have a mortgage. Originators can be denied access to the agency market if they do not work through the GSEs. (Counter examples of free-riders where consumers cannot be excluded would be clean air, or streaming music without buying an album.)

3. **Rejectability:** Consumers can choose not to receive mortgage services. Participants in each sector can generally choose to participate or not on an individual loan, sub-market or pool level. However, banks and the GSEs are somewhat constrained by duty-to-server requirements that were established to offset the externality of insufficient credit availability to underserved communities.

4. **Diminishability***:* Supply of mortgage credit services is generally not infinite; however, like other financial markets historically, the mortgage market has periodically supplied too much credit where the risk turned out to be catastrophically underpriced. Regulatory efforts to ensure a consistent supply of mortgage funding have contributed to the potential for excess supply and greater distortions. For example, while deposit insurance and guarantees on MBS allow participants to continue offering mortgages during periods of financial stress, those guarantees also reduce market discipline from the supply equation.

2.2 Conditions not met which Contribute to Competitive Failures of the Mortgage Market

1. **Symmetry of Information:** Lenders and borrowers (and others) generally possess information the other party would like to have. While this is both a theoretical and practical problem, it can be addressed by better disclosure. However, during the lead up to the financial crisis, there was a tremendous amount of fraud and misrepresentations in all segments of the mortgage finance system. Asymmetry can lead to adverse selection and moral hazard; at the extremes it can lead to catastrophic contagions and elimination of markets (see the non-Agency market today).

2. **Accessibility:** Over the sweep of history, the mortgage market has reflected the attributes of an incomplete market. Very large barriers (and externalities) led to vastly diminished and uneven supply of mortgage credit, lower and unequal homeownership rates, and much less housing investment. Many of the interventions in place today are responses to these century-old market failures. Some of them work, while others worked too well and created dislocations. Here are some of the indicators.

    a. For much of the last 20 years, two-thirds of US households owned where they lived, but less than half did so up until the 1940s.[1]

    b. Houses were smaller and more crowded at the turn of the 20th century and housing is a much larger share of household wealth now than 100 years ago.[2]

    c. Mortgage debt has been more than 60% of GDP since the 1980s (peaking during the housing bubble at 100%), but was only 25% of national income in the 1950s[3], and very likely much lower in the 50 years before that.

    d. A century ago, mortgages were generally short-term, required large down payments, and there was no concept of a national mortgage market. Mortgage funding was very local. Local thrifts generally financed mortgages supplied only by local deposits, leading to frequent mismatches in local supply and demand. As a result, mortgage rates varied locally, underwriting standards and documents varied, as did fairness.

[1] https://www.census.gov/hhes/www/housing/census/historic/owner.html

[2] The American Mortgage in Historical and International Context, Richard K. Green and Susan M. Wachter, 9/21/2005 http://repository.upenn.edu/cgi/viewcontent.cgi?article=1000&context=penniur_papers

[3] Board of Governors of the Federal Reserve System (US), Mortgage Debt Outstanding, All holders [MDOAH], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/MDOAH, August 21, 2017, U.S. Bureau of Economic Analysis, Gross Domestic Product [GDPA], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/GDPA, August 21, 2017

So, if you wanted to buy a house 100 years ago, you already needed wealth, a local lender who had local funds, and one who was willing to lend you money based on their own standards, fair or not.

3. **No Externalities:** The full costs and benefits of mortgages are not borne by service providers and borrowers. Externalities (positive and negative) get larger as asymmetry, time lags and barriers grow; and can be national in scope. Negative externalities include the social costs of discrimination, the cost of market disruptions and contagions to other markets when large counter-parties fail, and the impact of ruinous competition on the disciplined availability of credit.

   Positive externalities lead to under-investment by private entities because they don't reap the full benefits of providing standards or common infrastructure. Some examples of this are: creating national secondary markets, national servicing standards, payment infrastructure, capital standards, and lending and documentation standards.

   The negative synergy of barriers and externalities led to vastly limited financing for housing which led to under-investment in housing, and to extending the legacy of discrimination as well. Intervention during the 20th century corrected some of these large failures but also played a major role in causing and aggravating the global financial crisis of the last decade. Deposit insurance and government sponsorship enabled over-extended liquidity to the mortgage market and weakened risk discipline. This was unchecked by regulators and rating agencies, magnifying the consequences. The non-Agency secondary market facilitated excessive leverage in credit risk as did the incentives to satisfy stockholders for the GSEs.

4. **Immediacy:** Potentially, this failure may present the largest obstacle to a stable market that avoids catastrophic disruptions. The full benefits, and more importantly the full costs of getting or providing mortgages may not show up for years and can outweigh the benefits. Without immediacy or certainty, there are limits to the ability of feedback mechanisms to constrain the actions of market participants. When coupled with weak diminishability this can lead to excessive growth of "bad" players and a race to the bottom.

   Examples of the hidden (non-immediate) costs of mortgages arise from prepayment risk, credit risk, relaxed underwriting standards, undercapitalized counterparties, as well as under-enforcement of reps and warrants. In each case, firms ignoring these risks can increase their profitability in the short term through higher volumes and apparently lower costs. Shareholder driven firms facing short-term profitability goals to improve share prices and to increase management compensation, may succumb to these temptations, or not even realize the risk. However, when economic conditions change, devastatingly large losses are not only possible, but likely.

Table 1 summarizes the competitive conditions of the segments of the mortgage market. The system is generally competitive when it involves small counter-parties on individual transactions backed by US contract law. As the process flows towards large counter-parties involved in maintaining large markets or large infrastructure, competitive conditions break down.

Table 1

	Is Competitive Condition Met?							
	Property Rights	Exclud -ability	Reject-ability	Diminish -ability	Info Symmetry	Access-ibility	No Exter-nalities	Immediacy
Consumers	Yes	Yes	Yes	Yes	Partial	Partial	Yes	No
Originators	Yes	Yes	Yes	Partial	Partial	Partial	Partial	Partial
Servicers	Yes	Yes	Yes	Yes	Partial	No	No	No
Banks	Yes	Yes	Partial	Partial	Partial	No	No	No
GSEs	Yes	Yes	Partial	Partial	Partial	No	No	No
Insurers	Yes	Yes	Yes	Yes	Partial	Partial	Partial	No
Private Capital	Yes	Yes	Yes	Partial	No	Partial	Partial	No
Rating Agencies	Yes	Yes	No	No	No	No	No	No

Since some segments of the mortgage market meet some requirements for successful competitive markets, it is not surprising that there have been both successes and failures across the segments. The success of interventions varies as well, so evaluating how well a segment functions today requires interpreting the net impact of imperfections and interventions. As a result, some segments with larger imperfections may function better than segments with smaller market failures or inappropriate interventions. Table 2 links past successes and failures for each segment to the competitive conditions.

Table 2

Segment	Successes	Condition not met	Failures	Notes and Needs
Consumers	Competitive	Accessibility	Wealth barriers, legacy of inequality, discrimination	Fairness, move towards more equal wealth distribution
Originators	Highly competitive	Diminishability, immediacy	Few internal standards, originate anything	Competitive market w/external standards
Servicers	Government mortgages ok	Accessibility	Non-prime market very messy	Standards & quality issues
Banks	Reach, capital, infrastructure	Accessibility, Immediacy	Excessive risk-taking w/o engaged regulator; limited competition by size, small markets, non-standard borrowers	Need effective regulation, franchises and some competition
GSEs	Standards, stability, infrastructure, mission	Accessibility, No Externalities, Immediacy	Undercapitalized, under-regulated, ruinous competition	Lots of benefits from scale; shareholders and weak regulator are problematic
Insurers	Source of limited capital	Immediacy	Weak standards, ruinous competition	Need effective standards
Private Capital	Competitive and large capacity	Diminishability, No Externalities, Info-symmetry	Prone to exuberance and exposed to liquidity events	Works best with consistent production standards
Rating Agencies	Familiarity	Rejectability, Diminishability, Immediacy	Fatal principal/agent problem	Failed when needed most

Problems across the mortgage ecosystem have been caused by failures of markets and failures of intervention to correct market failures. Individual transactions in the mortgage market generally have characteristics of private goods that meet competitive market criteria. However, information asymmetries are pervasive; there are large infrastructure and capital requirements, positive and negative externalities, and hidden costs. These long-standing imperfections have led to deeply ingrained interventions which can sometimes be harmful. Any of these failures can disrupt the smooth functioning of markets on their own, but the risk of long-term failures and the size of catastrophic disruptions are greater when several co-exist.

From table 1 above, the segments most likely to be successfully competitive markets are consumers, originators, private capital and insurers. This insight is supported by the existence of many consumers and originators in the front of the process, and many investors in prepayment and credit risk at the end of the process. However, in the middle there are large intrinsic market imperfections related to infrastructure, standards, capital requirements, intermediation, access and regulation. As the efficient number of providers in each segment is related inversely to the size of the entry barriers and the complexities of regulation, it is not surprising that there are only a few entities operating in the segments most affected by these market imperfections.

2.3 Remedies for Market Failures

A better functioning mortgage market can best be achieved by addressing each market imperfection appropriately. A regulatory solution that doesn't address a critical condition, or addresses a condition with the wrong remedy may exacerbate the risk of market failure. Regulators, when properly engaged, can improve capital and standards, and can internalize the positive and negative externalities that lead to incomplete markets and to excessive risk. However, regulation in practice is often overlapping and burdensome or not forceful enough. Ineffective regulation may lead to unfairness, and certainly leads to excessive risk and instability on the part of empowered franchises that are regulated.

Economists have identified appropriate regulatory responses to failures of competitive conditions. These are generally not ways to make imperfect markets competitive, but rather they are methods to move intrinsically imperfect market towards better outcomes for society. Some of these are:

1. Information asymmetry → Disclosure requirements and enforcement
2. Barriers to entry → Grant franchises to capture full benefits at scale and avoid ruinous competition. In return, regulate (returns, fairness, capital).
3. Externalities → Mechanisms to address unfairness, ring fence contagions (currently provided by guarantees), which should be specific and priced. Charge franchises for the value of government sponsorship.
4. Immediacy → Capital requirements, risk limits, counter-party requirements, standards, and consistent enforcement

3 THE GSES

In the GSE segment of the mortgage finance ecosystem many of the conditions required for a successful competitive market are not met. Rejectability, Diminishability and Information Symmetry are partially met, but critical conditions such as Accessibility, No Externalities and Immediacy not only are not met, but fall far short of competitive requirements. The scope and complexity of these failed conditions pose significant obstacles to establishing competitive equilibrium, and will not achieve desired outcomes for society without wise and effective intervention.

For example, the complexity and scale of the required infrastructure for an integrated national mortgage market severely limits accessibility to any but large firms. Further, such a large investment is likely only if the investor could prevent others from benefitting from the market infrastructure without paying for it.

Beyond infrastructure there are other advantages to scale for the GSE functions. These include: being the system of choice for lenders and the standard setter for underwriting, diversification of a large portfolio and in funding MBS, CRT and debt. Society is better off with one good system, good standards, and liquid and diversified debt markets, but smaller firms could never reap the benefits of providing these components to the broader market. Thus, they would be unlikely to provide them, and indeed 100 years ago these attributes did not exist. Bestowing the property rights of these ‘community’ functions to particular enterprises increases the likelihood that they get provided in the proper scale. However, the more valuable these rights the greater the need for constraints in terms of mission, compliance and resiliency.

Finally, the central role of housing finance in the economy exacerbates externalities and can create contagions to the broader economy. Significant disruptions in the housing finance system in the past have crippled non-housing financial sectors and devastated the real economy. These consequences are compounded by the lack of immediacy, which means that latent risks can magnify without any market feedback until the risks borne by the GSEs are catastrophically large.

The preceding analysis and empirical evidence suggest that competitive markets for GSE functions are unlikely to lead to desirable outcomes for society. When you balance all the ways a dominant firm can be more profitable and all the ways a less dominant firm can take on more risk to compete, it should be clear that there is not a stable equilibrium.

Absent intervention, none of three potential outcomes are good for society. (i) Without dominant firms that can enjoy scale economies and capture property rights, we get the mortgage finance system and housing market of the early 20th century: uneven, under-financed and inadequately capitalized. (ii) Dominant firms extract monopoly profits and are motivated to restrict innovation and new entrants. (iii) The middle outcome is that of a few sizable entrants with some market power. This is a prime candidate for ruinous competition in a race to the bottom, exacerbated by hidden risks that create an ongoing cycle of failures; like mortgage insurance. In fact, we have seen all of these together.

With GSEs under conservatorship and dominating the market for the past 10 years, the mortgage ecosystem has been remarkably stable, with perhaps the longest period without a market disruption since at least the 1970s. While this may not be the ideal solution, it does indicate that there may be benefits to limiting the amount of competition and maintaining a high degree of regulation in this segment of the mortgage finance system.

3.1 Many Proposed Solutions Fall Short

There have been several proposed solutions to alter the market structure for the GSEs that increase competition and harness the power of market incentives.

3.1.1 WHY CAN'T WE JUST LET THESE FIRMS FAIL?

One line of reasoning is that removing government support from the GSEs would lead to market discipline: If faced with severe losses, the GSEs should be allowed to fail.

It is tempting to think that allowing a GSE to fail would bring discipline to this segment of the market. However, failing to meet many of the competitive market conditions makes it unlikely that this would lead to a more competitive or stable market. Instead it is more likely that there would be a series of firms that would dominate the market, punctuated by market collapses as smaller firms took excessive risk to gain market share and inducing the dominant firm to do so as well. The failure of such a firm would likely have significant impact on the economy which would either lead to severe negative externalities or a bailout to protect the infrastructure of the market. Even if there are multiple guarantor entities, it is likely that if one is failing the others are likely to be under pressure. Government might still need to intervene.

Further, the risk isn't just that they fail, but the damage that is done as they race toward the bottom. We have seen the impact of poor underwriting and lax standards on the broader financial system when competition to feed the CDO machine led to a severe decline in underwriting discipline in the sub-prime market.

At the other extreme, these market conditions could produce a single dominant firm that would once again be too big to fail and would exercise monopoly power, increasing borrowing costs and stifling innovation, draining resources and profitability from the other segments.

3.1.2 WILL THE CSP SOLVE THESE PROBLEMS?

The current focus on creating a common securitization platform hopes to level the playing field for multiple competitors by providing equal access to the MBS market. Unfortunately, this does not address the lack of accessibility around credit standards, fairness and financial resiliency. It only addresses one large, but essentially simple market failure, that of the need for a unified securitization infrastructure. The disparity in value of MBS is only one of many possible sources of added value for a dominant firm over other firms. As described earlier, there are numerous competitive and societal advantages to dominant securitizers and guarantors, as well as risks. The current pricing advantage of Fannie Mae is just one example of the benefits of being the largest securitizer. Even if this market failure is successfully eliminated without a firm exercising monopoly power, several significant market failures remain.

The lack of immediate consequences combined with inadequate control over standards heightens the risk that aggressive players can underprice risk or reduce standards to gain business. Once again the risks are either a dominant player exercising monopoly power, a race to the bottom, or both. Eliminating all of these problems requires expanding the CSP to incorporate most aspects of the GSE functions and we're back to where we started. The CSP, rather than facilitating an improved outcome, would instead become a government run monopoly that limits choice and innovation.

3.1.3 WHAT ABOUT MORTGAGE BANKERS ASSOCIATION SOLUTION OF COMPETITIVE UTILITIES?

The Mortgage Bankers Association has proposed that the GSEs be transformed into utilities and that the number of GSEs be expanded to foster competition. While this seems to address the unmet competitive conditions, this proposal embodies contradictory motivations that will undermine the objectives. The establishment of utilities is generally based upon the idea that that due to economies of scale or other barriers to entry, the requirements for a successful competitive market cannot be met. The MBA recognizes this and thus adopts a utility structure. However fearful of the power of a large utility the MBA proposal then seeks to create multiple competitive utilities.

Trying to impose a competitive structure on a market which would tend toward monopoly is likely to create instability. Once again, due to the lack of immediacy and the weak level of diminishability, the multiple utilities will seek avenues to create and exploit competitive advantages. The next result once again would be for a dominant player to emerge or for there to be a race to the bottom. Weaker firms are likely to lobby for reduced regulatory burden and higher allowable returns so that they can attract capital to compete with the dominant firm.

It is probably best to pursue a more traditional utility structure and limit the role of the utility to segments where competition is less likely to achieve the desired outcomes.

4 OUTLINE OF A SOLUTION

Identifying appropriate solutions begins with recognizing that trying to establish competitive markets is unlikely to generate desirable outcomes for some functions currently performed by the GSEs. Therefore, reform proposals should not rely on fostering competition as a central aspect of the plan for those functions.

Typically, economists recommend establishing regulated utilities to overcome large entry barriers and gain the full benefits of scale economies. Utilities can be shareholder-owned, a customer-cooperative, or a government entity. As with banks and power utilities, the government could grant franchises to facilitate the aggregation of resources, allow adequate returns, enforce efficient standards, and provide for some (not ruinous) competition without needless duplication.

Ideally, regulation and standards should be federal since the US mortgage market is national; state regulation naturally creates externalities and inefficiencies by proliferating standards, and in principle violates the Commerce Clause. In practice, this probably means limiting the number of charters to one to three, establishing capital requirements to protect taxpayers along with associated risk and return controls. The governance structure of the entities must limit excessive risk taking and discourage a focus on increasing market share or profits. The greater the systemic importance of the franchises and of the market segment, the greater the need for effective regulation.

Such a structure can address the failed competitive market conditions in the guarantor and securitization functions, and nurture competition in the other segments. In particular, limiting the size and scope of the new entities addresses diminishability, though lower loan limits may be desirable to achieve this goal. Centralized entities face less risk of adverse selection from information asymmetry and can more effectively promulgate desired standards. These entities can be required to provide access to borrowers across all markets and to large and small originators, thus improving accessibility. The regulator can directly address externalities by tracking systemic risks as well as limiting discriminatory behavior. Finally, a robust capital, risk and return framework can be designed to create immediacy by explicitly providing a capital cost for otherwise hidden risks.

Such a solution is not as far off as it may seem because much about the GSE framework already works. The GSEs set standards for underwriting, servicing, documentation, and for intermediating prepayment and credit risk. They have each invested in securitization infrastructure, although a single system, or even one combined with the GNMA infrastructure may be sufficient. It's worth noting that the failure of the GSEs was the negative synergy of stockholders, an inadequate capital standard in return for the Federal franchise, and a regulator with insufficient powers prior to the Housing and Economic Recovery Act (HERA).

The current GSEs could be transformed into either originator owned cooperatives or shareholder owned utilities. Much of the regulatory framework is now in place to do so. Perhaps the biggest gap is the establishment of a robust capital framework to address the hidden risks. Though this is more a gap in political will, not in the ability of the FHFA to determine and enforce a standard.

Establishing government franchises, whether shareholder or mutually owned, does not eliminate risk. The larger and more successful these franchises are, the greater the need for effective regulation, largely shielded from political pressure. Politics should set policy and the regulator should execute it, advancing safety, soundness and fairness for the mortgage ecosystem. This structure has greater potential to succeed than one where the conditions for success are not met at the outset.