ONE VOICE. ONE VISION. ONE RESOURCE.

Who Will Own Mortgage Assets?

Michael Fratantoni, Ph.D.
Chief Economist and Senior Vice President,
Research and Industry Technology
Mortgage Bankers Association

Executive Summary

We are approaching an important turning point with respect to the mortgage market. With the latest round of Quantitative Easing completed, the Federal Reserve will soon no longer be the dominant purchaser of agency mortgage-backed securities (MBS). At the same time, the GSEs are required to continue to shrink their investment portfolios, and banks, foreign investors, asset managers, broker-dealers and mortgage REITs all face significant constraints that prevent them from increasing their share of the market to pick up the slack. Unlike prior to the financial crisis, when Fannie Mae and Freddie Mac (the GSEs) maintained large retained portfolios, there is no single player waiting in the wings to be the dominant buyer day in and day out going forward.

Rebuilding the housing finance system to be both more stable and more competitive is a long-term endeavor. Identifying the barriers to private capital increasing its ownership of mortgage assets, and moving to reduce those barriers where feasible, should be part of the ongoing conversation and debate.

Regulators are acting to reduce government-sponsored channels that once directed capital to the U.S. mortgage market. However, non-government channels, which could replace this asset demand, are being blocked by various measures.

At the same time, there has been a very large increase in funds around the globe seeking safe fixed-income investments. The United States is a safe haven and a natural place for global funds to invest capital for the short and long term, as evidenced by the increased demand for U.S. Treasury bonds during repeated flights to quality in the past few years.

There are a handful of public policy objectives that need to be balanced with respect to this issue. First, there is a goal to increase the amount of **private capital** in the system, in order to have market prices, rather than administrative actions, determine the allocation of capital. Second, there is an objective to **minimize systemic risk,** by diversifying the holdings of mortgage assets across different investors, to disperse rather than concentrate risk. Finally, there is a goal to **ensure liquidity** to the mortgage market, i.e., to reduce unnecessary volatility in the market that could impact the ability of qualified borrowers to receive financing. The best policy choices will actively gauge how different regulatory actions will work to advance or move away from this set of policy goals.

INTRODUCTION

Policymakers and industry have a common goal to increase private capital's role in the mortgage market. While the future of the secondary mortgage market continues to be debated, a key policy discussion is how and in what form private capital can best re-enter the system. The Mortgage Bankers Association (MBA) has been clear in advocating for private capital to take on a larger role in covering credit risk within the government-guaranteed, conforming portion of the market. It is equally important to consider how private capital can best be drawn to the interest-rate risk of the conforming market, as well as how private capital can be re-engaged for lending outside of the government-guaranteed system. The decisions made on these important topics will affect not only how private capital is deployed within the U.S. mortgage market, but also who will own and finance mortgages and MBS going forward.

For years, the GSEs' ability to issue long-term fixed-rate debt appeared to be a stabilizing pillar beneath the surface of the U.S. housing finance system. Long-term fixed-rate debt issued by the GSEs was a better match for funding long-term fixed-rate MBS than other funding instruments. On the other hand, the GSEs' purchases of fixed-rate MBS with minimal capital turned out to be a destabilizing factor. In effect, the GSEs did not have enough "skin in the game" to hold such a dominant position in the marketplace.

Fannie Mae and Freddie Mac's investment portfolios totaled more than $1.5 trillion at their peak. These portfolios resulted in the accumulation of substantial credit, interest-rate and liquidity risk, and ultimately posed a systemic risk that required the government to step in and support the GSEs in conservatorship from 2008 to the present.

Under the Preferred Stock Purchase Agreements (PSPAs), Treasury mandated that the GSEs rapidly reduce the size of their investment portfolios, first at ten and then at 15 percent per year until they reach $250 billion each. The objective was to reduce the concentration of risk, ultimately borne by the taxpayers, that was enabled by the implicit government support that the GSEs had enjoyed. As of August 2014, the investment portfolios have been whittled down to total less than $1 trillion.

While not at all arguing with the motivations of this policy choice, i.e., to reduce systemic risk by rapidly shrinking the size of the investment portfolios, it is necessary to also acknowledge that these portfolios have historically served as a means to channel global capital into the U.S. mortgage market. The GSEs issued short- and long-term debt to finance the portfolios, effectively enabling global investors to participate in the U.S. mortgage market without bearing the uncertain cash flows that come from directly owning mortgages or MBS. The question becomes: how should the U.S. mortgage market be structured to be able to attract stable private capital over time now that the GSE investment portfolios will no longer play that role, at least to the same extent?

WHY NOW?

We have not yet had to focus on this issue for several reasons. First, the Federal Reserve, through its quantitative easing asset purchases, has accumulated more than $1.7 trillion of agency MBS over the past five years. In many months, the Fed purchases accounted for the vast majority of gross issuance, and in many months the Fed purchased more than the total net issuance. Per the Federal Open Market Committee (FOMC)'s recent announcements, the Fed stopped increasing the size of this portfolio in October. The Fed will likely continue to replenish its portfolio, replacing prepayments and amortization with new purchases, until sometime after the first increase in the Fed's target short-term rate. After that, likely at some point in the middle of 2015, a major investor will be leaving the market for MBS. Although there is considerable uncertainty regarding whether the Fed will actively sell MBS from its portfolio, or simply allow it to passively run off after 2015, there will still be a substantial change in the market following the exit of its now-largest single investor. Given the Fed's ability to print money, the central bank has been providing a stable funding source supporting the U.S. housing finance system. That will no longer be the case.

Second, modest supply has required little demand. MBA estimates that origination volume in 2014 will be the lowest in 14 years. And although we are forecasting modest gains in volume in 2015 and 2016 relative to 2014, total production is likely to remain low. With less origination there is correspondingly less MBS issuance.[1] Reduced supply has kept spreads relatively tight, even as the GSEs have been net sellers and the Fed has tapered its purchases.

Third, demand from banks has been relatively strong. Banks continue to have relatively low loan-deposit ratios, making up the difference by increasing, or at least maintaining, their securities holdings. However, the Basel III standards have led some larger banks to favor whole-loan over MBS holdings, as

1. The only entity that has maintained its level of global issuance of long-term debt for the sole purpose of financing U.S. housing debt is the Federal Home Loan Bank (FHLB) system. The FHLB system combines the ability to issue long-term debt with a more secure way to actually own the long-term fixed-rate MBS. The FHLB system borrows globally at very attractive rates and for longer durations than are available to most issuers, due to its GSE status, and in turn provides financing to its member institutions in many ways, predominantly long-term collateralized advances. To support this activity, the FHLB system maintains stringent credit standards that require any lender utilizing FHLB borrowing rates to have a significant amount of "skin in the game" through margin requirements, credit risk retention and purchases of FHLB capital stock. Part of finding the solution to the question of who will own mortgage assets in the future is determining how to best leverage the FHLB system that is already in place.

MBS holdings held in available-for-sale (AFS) accounts are now marked to market for regulatory capital purposes, leading to undesirable earnings volatility from a bank's perspective. These banks have been particularly increasing their holdings of jumbo and near-jumbo whole loans on their balance sheets. However, as noted later, the pending liquidity coverage ratio (LCR) has led many banks to preferentially hold Ginnie Mae rather than GSE MBS, as the GSE MBS receive a haircut under the LCR.

Finally, attention has appropriately been focused elsewhere. Much attention has been focused on policy steps to improve the efficiency of the secondary market, most notably, FHFA's recent proposal to have Fannie Mae and Freddie Mac issue a single security. Adopting a single security would enable the GSEs to compete with one another on a more level playing field, providing benefits to homebuyers, taxpayers and lenders. Ending the trading differential between Fannie Mae and Freddie Mac securities should make our housing finance system more efficient, allowing borrowers to receive the best price on their respective loans. Additionally, a single security is a key step on the path to GSE reform, a bipartisan goal shared by both Houses of Congress and this Administration.

As the market continues to recover, ensuring adequate investment will become more important.

Table 1. Total Mortgages

Billions of dollars; amounts outstanding end of period, not seasonally adjusted

		2009	2010	2011	2012	2013	2013				2014	
							Q1	Q2	Q3	Q4	Q1	Q2
1	Total mortgages	14425.4	13793.7	13490.7	13283.2	13295.5	13228.1	13232.4	13275.9	13295.5	13285.8	13322.6
2	Home	10937.8	10445.4	10203.5	9983.6	9894.5	9932.4	9908.9	9921.6	9894.5	9860.3	9855.4
3	Multifamily residential	855.0	851.9	859.1	894.7	932.2	898.8	909.3	920.1	932.2	943.5	957.6
4	Commercial	2486.6	2342.4	2260.9	2232.0	2293.1	2223.2	2239.8	2259.3	2293.1	2304.7	2330.8
5	Farm	146.0	154.1	167.2	173.0	175.7	173.7	174.3	175.0	175.7	177.2	178.8
6	Total liabilities	14425.4	13793.7	13490.7	13283.2	13295.5	13228.1	13232.4	13275.9	13295.5	13285.8	13322.6
7	Household sector	10622.8	10121.9	9899.9	9696.9	9619.4	9650.0	9629.3	9642.9	9619.4	9585.8	9580.0
8	Nonfinancial business	3627.3	3495.7	3401.3	3391.9	3474.0	3378.6	3402.4	3435.9	3474.0	3494.7	3535.7
9	Corporate	758.3	643.0	570.7	575.3	602.5	572.0	576.5	587.0	602.5	609.9	623.8
10	Noncorporate	2869.0	2852.7	2830.6	2816.6	2871.4	2806.5	2825.9	2848.9	2871.4	2884.8	2911.9
11	Federal government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	REITs	175.3	176.1	189.5	194.4	202.2	199.5	200.7	197.1	202.2	205.3	206.9
13	Total assets	14425.4	13793.7	13490.7	13283.2	13295.5	13228.1	13232.4	13275.9	13295.5	13285.8	13322.6
14	Household sector	110.9	100.1	100.8	86.9	79.8	85.1	83.1	81.3	79.8	78.1	76.3
15	Nonfinancial corporate business	29.5	28.0	27.4	26.6	25.8	26.4	26.2	26.0	25.8	25.6	25.4
16	Nonfinancial noncorporate business	37.9	42.1	42.5	43.1	44.0	43.2	43.4	43.7	44.0	44.2	44.7
17	State and local governments	193.0	203.5	203.4	210.8	213.9	214.9	215.2	213.8	213.9	216.9	221.4
18	Federal government	108.4	106.6	109.9	111.5	115.5	113.3	113.2	114.1	115.5	116.0	116.5
19	U.S.-chartered depository institutions	4371.9	4194.9	4049.6	4028.8	3983.5	3989.8	3982.5	3975.3	3983.5	3991.3	4039.0
20	Foreign banking offices in U.S.	37.8	35.4	32.8	30.9	30.3	29.7	29.6	29.8	30.3	32.2	33.7
21	Banks in U.S.-affiliated areas	42.3	35.8	33.4	34.9	32.4	34.3	33.6	31.6	32.4	32.0	31.9
22	Credit unions	316.9	317.0	320.5	327.8	345.9	328.0	332.1	340.4	345.9	350.4	357.5
23	Property-casualty insurance companies	4.4	4.1	4.9	5.6	7.9	5.8	6.6	7.0	7.9	8.3	8.8
24	Life insurance companies	326.1	317.5	332.5	344.4	363.2	344.6	349.1	357.2	363.2	365.2	369.9
25	Private pension funds	23.7	26.5	21.9	23.1	19.7	22.2	21.4	20.5	19.7	18.9	19.8
26	State and local government retirement funds	12.3	11.9	11.9	11.2	8.6	10.7	10.2	9.7	8.6	11.0	11.9
27	Government-sponsored enterprises (1)	707.7	5021.0	4924.0	4823.5	4877.8	4825.0	4836.1	4872.0	4877.8	4861.0	4840.1
28	Agency- and GSE-backed mortgage pools	5376.7	1139.5	1304.8	1437.0	1569.4	1462.7	1498.1	1540.8	1569.4	1585.8	1600.0
29	ABS issuers	2249.4	1921.8	1703.2	1493.1	1221.6	1454.9	1282.3	1247.8	1221.6	1172.0	1154.8
30	Finance companies	430.3	243.5	211.2	179.5	157.0	174.4	171.2	165.9	157.0	154.1	149.6
31	REITs	46.0	44.6	56.1	64.5	199.3	63.1	198.7	199.1	199.3	222.8	221.3

Source: Federal Reserve

CHOICES FOR THE FUTURE: IF THE GSES AND THE FEDERAL RESERVE ARE NOT GOING TO BE THE PREDOMINANT HOLDERS OF MORTGAGE ASSETS GOING FORWARD, WHO WILL BE?

The Federal Reserve tracks the flow of funds through the U.S. economy with its quarterly Financial Accounts of the United States. The reports include detailed estimates of mortgage and MBS holdings. For example, as of June 30, 2014, the Fed estimated there were $13.3 trillion in mortgage debt outstanding, composed of almost $10 trillion of home mortgages, almost $1 trillion in multifamily mortgages, almost $2.3 trillion in commercial mortgages and almost $200 billion in farm mortgages. These mortgages were held as assets by a variety of investors, ranging from depositories, which held roughly $4 trillion, the GSEs, $4.8 trillion, and individual households, $76 billion. Note that portions of the mortgages outstanding are classified as "held" by GSE-backed mortgage pools or ABS issuers. From an accounting standpoint, these securities are the liability of the issuers in certain cases, but it is also of interest to understand who holds the securities.

As shown in the table below, GSE MBS are held by the same types of investors, but the Fed's holdings of $1.7 trillion almost match those of the entire banking system. In the post-crisis period, outside of the Fed's gains, MBS holdings have fallen at the GSEs, but have increased among mutual funds, credit unions, banks and REITs.

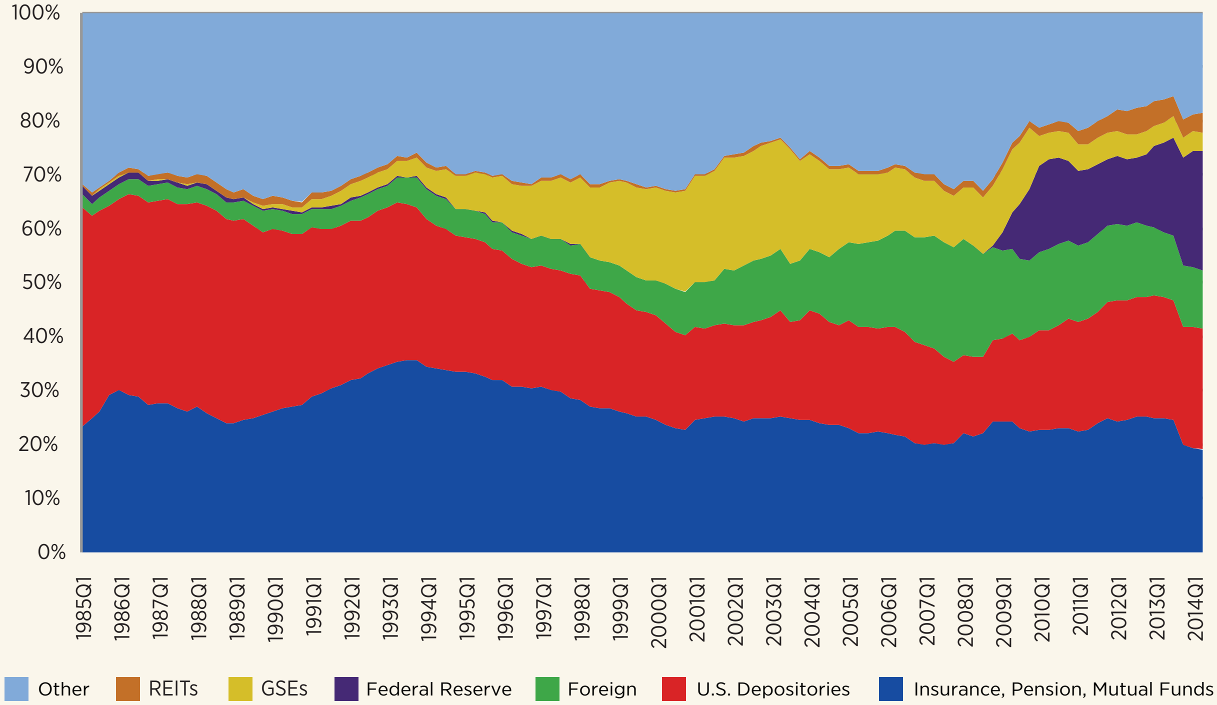
Table 2. Agency- and GSE-Backed Securities[1]
Billions of dollars; amounts outstanding end of period, not seasonally adjusted

		2009	2010	2011	2012	2013	2013				2014	
							Q1	Q2	Q3	Q4	Q1	Q2
1	Total liabilities	8106.8	7598.2	7577.4	7554.6	7794.1	7590.8	7660.7	7713.6	7794.1	7721.1	7774.6
2	Budget agencies	23.5	24.2	25.3	24.9	24.5	24.6	25.0	25.1	24.5	24.0	24.0
3	Government-sponsored enterprises	2706.6	6434.5	6247.3	6092.7	6200.2	6103.5	6137.6	6147.7	6200.2	6111.4	6150.6
4	Agency- and GSE-backed mortgage pools	5376.7	1139.5	1304.8	1437.0	1569.4	1462.7	1498.1	1540.8	1569.4	1585.8	1600.0
5	Total assets	8106.8	7598.2	7577.4	7554.6	7794.1	7590.8	7660.7	7713.6	7794.1	7721.1	7774.6
6	Household sector	357.4	335.4	300.2	152.7	97.7	95.9	106.3	94.8	97.7	1.2	3.7
7	Nonfinancial corporate business	14.3	16.0	14.3	13.2	9.4	6.0	7.6	7.8	9.4	10.8	13.1
8	State and local governments	490.2	513.9	507.0	504.7	490.9	509.3	504.7	496.1	490.9	492.6	497.5
9	Federal government	196.4	149.2	31.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Rest of the world	1150.0	1095.8	1078.2	1001.2	885.3	957.3	904.1	926.0	885.3	860.6	851.1
11	Monetary authority	1068.3	1139.6	941.7	1003.4	1547.4	1143.4	1277.3	1402.7	1547.4	1650.5	1707.6
12	U.S.-chartered depository institutions	1417.4	1527.2	1634.1	1669.6	1717.3	1710.5	1725.7	1700.4	1717.3	1731.0	1724.9
13	Foreign banking offices in U.S.	31.3	26.5	30.6	32.1	25.4	27.7	26.1	26.2	25.4	22.5	21.0
14	Banks in U.S.-affiliated areas	20.5	12.8	4.8	2.6	1.9	2.4	2.2	1.9	1.9	1.8	1.8
15	Credit unions	110.7	151.5	182.1	197.0	199.2	206.2	210.2	206.0	199.2	202.0	199.5
16	Property-casualty insurance companies	116.2	115.8	122.7	114.3	108.7	113.0	111.6	110.2	108.7	106.7	105.5
17	Life insurance companies	371.9	376.0	374.4	360.9	354.1	359.5	358.1	355.4	354.1	351.6	348.8
18	Private pension funds	177.5	184.0	188.3	210.4	225.6	213.9	218.0	221.6	225.6	224.3	228.4
19	State and local government retirement funds	168.7	169.6	182.0	202.9	216.4	206.6	213.7	215.2	216.4	218.6	219.5
20	Federal government retirement funds	5.2	5.8	6.5	8.1	6.4	7.5	7.0	6.6	6.4	5.7	5.8
21	Money market mutual funds	543.0	402.8	403.7	343.5	361.1	325.5	344.9	354.3	361.1	326.2	327.8
22	Mutual funds	603.2	681.3	787.5	877.0	855.4	879.4	872.2	852.0	855.4	838.8	828.3
23	Government-sponsored enterprises	924.5	377.0	358.9	310.6	287.9	300.6	292.5	294.7	287.9	283.6	285.6
24	ABS issuers	99.6	3.6	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.2
25	REITs	105.2	143.4	248.1	357.6	261.9	345.9	327.5	306.9	261.9	253.1	264.1
26	Brokers and dealers	110.9	149.8	147.7	169.6	114.2	153.9	125.8	105.7	114.2	113.3	114.2
27	Holding companies	24.3	21.1	33.1	22.9	28.0	26.0	25.0	29.1	28.0	26.1	26.4

Source: Federal Reserve

1. Agency- and GSE-backed securities include: issues of federal budget agencies (line 2) such as those for the TVA; issues of government sponsored enterprises (line 3) such as Fannie Mae and FHLB;and agency- and GSE-backed mortgage pool securities issued by GNMA, Fannie Mae, Freddie Mac, and the Farmers Home Administration (line 4). Only the budget agency issues are considered officially to be part of the total debt of the federal government, which is shown in Federal Reserve Financial Accounts of the United States, September 18, 2014 release, table L.209, line 43.

Who Will Own Mortgage Assets?
Time Series Showing Holders of Agency MBS and Debt



Source: Federal Reserve, Financial Accounts of the U.S.

THE PUBLIC POLICY CHOICE: MITIGATING SYSTEMIC RISK WHILE MAINTAINING LIQUIDITY

The chart above shows how holdings of agency MBS and debt have fluctuated over time. Public policy choices with respect to these different investor groups will influence these shares in the future. The next section discusses the potential for each investor group to grow its share, given a range of constraints.

BANKS AND OTHER DEPOSITORIES

As noted above, banks and other depositories, in the aggregate, have been very large holders of mortgages and MBS. While adjustable-rate and shorter-term mortgages are better matched to banks' shorter-term deposits and other funding, it has historically been challenging for depositories to hold substantial amounts of long-term, fixed-rate mortgages. However, consumer preference for fixed-rate products in the United States has been strong, and recent regulatory actions through Dodd-Frank have made fixed-rate products even more common. Nevertheless, the Savings and Loan crisis of the 1980s remains a cautionary tale regarding financing long-term fixed-rate loans with short-term liabilities in a rising-rate environment.

Banks have successfully utilized the Federal Home Loan Banks (FHLB) to help support their financing of mortgages and as a means of hedging the inherent interest-rate risk. The FHLBs provide liquidity, term financing and assistance in managing the interest-rate risk on mortgage investments, while requiring the institution holding the loans to retain the credit risk.

While banks have the potential to become a key source of private capital for the mortgage market, their ability to invest in the housing finance market is being restricted by a number of regulatory and market limitations.

- Basel III and related requirements have increased capital requirements for banks, particularly the largest banks that make up a substantial amount of total system assets. Increased capital requirements lead to low-return assets like mortgages and MBS being less attractive.

- Changing FHLB requirements: The FHFA has recently proposed new limitations to FHLB membership requirements, which would limit the ability of some depositories to access the system if mortgages do not comprise a sufficient percentage of their total assets. This would be yet another hurdle to many banks continuing to originate and hold mortgage assets.

- Note that the FHLB system provides incentives for originators to produce and service high-quality loans. Through initial paid-in capital- and activity-based requirements, banks and others that utilize FHLB advances have the right incentives. Moreover, lenders are required to retain the credit risk of mortgages funded with FHLB capital. Beyond retaining credit risk, FHLB borrowers also have a stake in the ongoing success of their bank.

- As the economy continues to recover, banks are likely to continue increasing their commercial and industrial (C+I) lending, decreasing the share of their balance sheets available for mortgages.

- The banking system has countervailing pressures on its balance sheet. As interest rates rise, it is likely that deposit balances will decline, as savers will have an incentive to seek higher yields in money market funds or elsewhere.

- Large banks are also now subject to a liquidity requirement, the liquidity coverage ratio (LCR), which forces them to maintain a level of "high-quality liquid assets" (HQLAs) equal to their expected net liability flows over a period of time. HQLAs are classified into different tiers, with the highest quality such as Treasury and Ginnie Mae securities being given 100-percent credit with no haircut, while Fannie and Freddie MBS can only count toward 40 percent of the requirement and receive a 15-percent haircut. To meet these LCR requirements while holding more capital, banks may have to increase their return targets on remaining assets, again putting mortgages and MBS at a disadvantage.

In addition to direct holdings of mortgage assets, the banking system also plays an important role supporting liquidity for other investors in mortgages. In particular, banks have been important counterparties in the repo market for many investors. However, the Federal Reserve and other regulators have increasingly voiced concerns regarding banks' support for the repo market, and regulatory changes may have made this a less attractive business for many lenders. And based on recent Congressional testimony by Federal Reserve officials and others, there are plans to continue efforts to shrink this market.

(See Federal Reserve Governor Tarullo's recent testimony: *www.federalreserve.gov/newsevents/testimony/tarullo20140909a.htm*: "We have also taken steps to reduce risks posed by the use of short-term wholesale funding by actors outside the banking system. These include leading an effort to reduce reliance by borrowers in the tri-party repo market on intraday credit from clearing banks and increasing the regulatory charges on key forms of credit and liquidity support that banks provide to shadow banks. In part because of these actions and in part because of market adjustments, there is less risk embedded in short-term wholesale funding markets today than in the period immediately preceding the financial crisis. **The short-term wholesale funding markets are generally smaller, the average maturity of short-term funding arrangements is moderately greater, and collateral haircuts are more conservative.")** (Emphasis added.)

With existing regulatory pressures and the threat of more to come, banks' ability to grow their share of mortgage assets is likely limited.

ASSET MANAGERS AND BROKER-DEALERS

Pension funds, mutual funds and other institutional investors are typically going to be significant investors in mortgage assets. While individual strategies vary, these institutional investors are, on average, holding a bond portfolio that is close to the market index. As of March 2014, the Barclays U.S. Aggregate Index had a weight of roughly 31 percent for securitized assets (MBS, ABS and CMBS). These investors may increase their mortgage-related holdings relative to the index if they believe they can realize superior returns, but may well underweight the index at other times. It is a reasonable assumption that asset managers would significantly increase their holdings of mortgage-related assets in the aggregate only if mortgages became a larger share of all fixed income, or if they steadily delivered a better return for a given level of risk. Looking at the forecast for U.S. government budget deficits, given rapidly expanding entitlement spending, it looks likely that mortgage assets may be a smaller share of the total than in the past, as Treasury issuance ramps up once again. Yields on mortgage assets may indeed increase to attract more of this investment, though.

Broker-dealers have not been significant long-term holders of mortgages, but they have always played an important role in supporting the liquidity of the market through their holdings of inventory of various assets, and their ability to intermediate repo funding. However, recent regulatory changes have led many of these firms to substantially pare their inventories of MBS, leaving the potential for sharper increases in trading volatility in the future, with these smaller buffers. Regulatory focus on the repo market has also led to concern over potential price increases, leading to uncertainty over the long-term availability of cost-effective repo funding and which firms will provide such capital. Moreover, new rules with respect to margin requirements for essentially all participants add further complexity to this market.

FOREIGN INVESTORS

As mentioned above, global capital has supported the U.S. mortgage market. The United States has run large trade deficits with the rest of the world for decades. Last year, this deficit totaled almost $500 billion. The flip side of the trade (or current account) deficit is that the United States runs a capital account surplus with the rest of the world, i.e. private and government investors around the world save more in U.S. assets than U.S. investors invest in foreign assets. In some ways, this is an expression of foreign investors' confidence in the United States; in others it is a symptom of ongoing reliance upon foreign investors to finance our purchases of goods and services from abroad.

A portion of this ongoing inflow of funds has been directed into the mortgage market, given its depth of liquidity and higher yield than Treasury securities. However, post crisis, there has been a notable decline in foreign investors' willingness to hold MBS that do not benefit from an explicit government guarantee.

That said, post crisis there has been a very large increase in funds globally seeking safe, fixed-income investments. The United States is a safe haven and a natural place for global funds to invest capital for the short and long term. We have repeatedly seen this "flight to quality" over the past several years when there are financial, political or security issues abroad. However, these global flows will likely need to be channeled into mortgage assets through intermediaries, given the hesitance by foreign investors to directly invest.

WHAT ARE THE OBSTACLES TO FOREIGN INVESTORS BUYING A GREATER SHARE OF MBS?

- Private foreign investors include foreign banks and asset managers, who are under similar constraints as U.S. banks and asset managers with respect to being measured relative to a benchmark index return.

- Official investors, whether foreign central banks or sovereign wealth funds, are even more likely to look for an explicit government guarantee before investing in dollar assets.

- The U.S. mortgage market is complex, and MBS are complex securities to hold, hedge and finance. Many foreign investors are looking to intermediaries who can deliver more predictable cash flows from underlying mortgage assets.

- Foreign bank investors are constrained by Basel III and global systemically important financial institution (SIFI) rules as well.

MORTGAGE REITS

REITs were created through legislation (the REIT Act title contained in the Cigar Excise Tax Extension of 1960). By virtue of their legal status, REITs are subject to asset, income and distribution requirements that intentionally focus their investing activities within real estate and real estate finance. Seventy-five percent of their assets and income must be connected to real estate. REITs can have operating subsidiaries that originate or service mortgages. Certain lenders have established REIT affiliates which can be an outlet for lender originations.

Most mortgage REITs focus on holdings of agency and other MBS. In some ways, this business model has similarities to the GSE investment portfolios. Mortgage REITs use a combination of equity and debt to finance holdings of MBS. However, whereas the two GSEs pursued somewhat similar strategies and were dominant players in the market, there are more than 20 sizeable mortgage REITs with a wider variety of investment styles and financing arrangements, with varying concentrations in agency and non-agency MBS, whole loans, MSRs and other mortgage assets. Other differences:

- Total mortgage REIT MBS holdings were roughly $300 billion in midyear 2014.

- Mortgage REIT leverage is typically 6:1, contrasted with 40:1 for the GSEs or more than 10:1 for banks.

- To grow their capital base, given the extreme limitations on retaining earnings, mortgage REITs need to return to the market through follow-on offerings.

- The GSEs funded their investment portfolios with a combination of short- and long-term unsecured debt, both cash debt and longer-term debt synthetically created through swaps and other derivatives. Today, mortgage REITs debt funding is primarily from secured financing ("repo") of their mortgage assets from banks and other investors.

Mortgage REITs could play a larger role replacing Fannie Mae and Freddie Mac as owners of mortgage assets, but are restricted by a number of regulatory hurdles and concerns. First, regulatory concerns regarding the stability of the repo market are leading to pressures on this market. Regulators point to the severe disruption of this market during 2008. It seems that regulatory pressure could change both the availability of repo financing and the terms of such secured loans.

Recognizing this trend, and also seeing the value of increasing the stability of their funding base, some mortgage REITs have become members of the FHLB system. Typically, they were eligible through an insurance subsidiary. However, a recent FHFA proposal would eventually close this opportunity to obtain a more stable source of funding, even though it is clear that mortgage REITs are financing home loans in a manner not dissimilar from other FHLB members.

Second, there are ongoing concerns with respect to whether certain assets represent "interests in real estate" and hence qualify as "good assets" yielding "good income" for mortgage REITs. Failure to meet the required asset and income tests can result in significant tax and other consequences.

For example, the GSEs have recently experimented with back-end risk-sharing transactions known as STACR and CAS securities. In order to clear a variety of regulatory hurdles, these were structured as unsecured corporate debt of the GSEs, rather than as structured MBS. Unfortunately, this has raised questions as to whether the cash flows, intended to be a pure bet on mortgage credit risk, actually represent an interest in real estate from the perspective of the REIT requirements. An additional concern is that, by definition, the STACR and CAS securities are not "whole pool" interests in the referenced asset pool. As a result, mortgage REITs have not been significant investors in these securities (although a recent version issued by JP Morgan Chase may be more "REIT friendly" in its construction).

Spreads on STACR and CAS securities have been somewhat volatile recently. Broadening the pool of potential buyers to include REITs by making the necessary changes to the securities could be a beneficial move if it leads to expanded risk-sharing capacity for the GSEs.

Third, regulators across the spectrum have questioned whether the mortgage REIT model, utilizing limited leverage to realize an acceptable yield on a portfolio of mortgage assets, represents a new form of hidden leverage that could present a systemic risk.

However, this judgment seems odd from a broader perspective. A greater reliance on mortgage REITs would mean a larger share of the market for a set of institutions that have no government backing whatsoever, and hence represent truly private capital. As mentioned above, mortgage REITs are backed by significant permanent, equity capital. While they are leveraged institutions, their leverage is less than that of other institutions investing in the mortgage market. And their positions are hardly in the "shadows" — by law, REITs must have a broad distribution of ownership interests, and many, if not most, are publicly traded.

Through securities disclosures and other compliance requirements, counterparties, regulators and the public writ large have access to financial data on individual mortgage REITs. Recent Commodity Futures Tracking Commission (CFTC) rules have also resulted in many mortgage REITs being required to clear their hedge positions, introducing yet another review mechanism. Moreover, mortgage REITs are overseen on a daily basis by their counterparties and post margin to support their positions. In short, mortgage REITs currently provide regulators and counterparties with significant visibility into trading and capital positions, and the relatively large amount of equity in their capital structure reduces the counterparty risks posed by mortgage REITs relative to other similarly sized investors.

Organizing and capitalizing a REIT (at least from a legal and regulatory perspective) is a well-understood process. This sector could potentially be scaled up if some of the regulatory hurdles mentioned above could be ameliorated. Some of the challenges that REITs face, in particular the ongoing need to manage liquidity risk, the daily demands by counterparties to post margins against positions and the requirement to raise new capital if they want to expand, could be viewed as positive rather than negative aspects from a public policy perspective focused on minimizing systemic risk. Mortgage REITs are prime examples of private capital being deployed to hold and manage mortgage exposures. As purely private entities, some REITs have and some REITs will fail during severe market disruptions, but this is part and parcel of being fully private entities.

Conclusions

We are approaching an important turning point with respect to the mortgage market. The Federal Reserve will no longer be the dominant purchaser of agency MBS. And unlike prior to the financial crisis, there is no single player waiting in the wings to be the dominant buyer day in and day out going forward. The GSEs are required to continue to shrink their investment portfolios. And banks, foreign investors, asset managers, broker-dealers and mortgage REITs all face significant constraints to increasing their share of the market to pick up the slack.

That said, markets clear. "Where will the capital come from?" was a common question during the debate around housing finance reform, and most particularly with respect to the recent Johnson-Crapo bill. This question was posed primarily with respect to credit investors, but it is equally applicable to investors in the underlying assets. The simple, perhaps simplistic, answer is that for sufficient yield, investors will come to the market.

But who will those investors be? Are we necessarily headed for a new market dynamic with both higher and more volatile mortgage rates due to the lack of an investor or investors focused solely on MBS and other mortgage assets? Will this potential for increased volatility thin the herd even further? While hedge funds and other short-term buyers thrive on volatility, pension funds and other long-term investors do not necessarily do so.

Rebuilding the housing finance system to be both more stable and more competitive is a long-term endeavor. Identifying the barriers to private capital increasing its ownership of mortgage assets, and moving to reduce those barriers where feasible, should be part of the conversation and debate as we move forward.