Foreign Ownership of agency MBS

Prepared by: State Street Global Advisors and Urban Institute's Housing Finance Policy Center
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RESEARCH REPORT[1]

Overseas investors have historically been, and continue to be, a reliable source of demand for agency mortgage-backed securities (MBS), i.e., those issued by Ginnie Mae, Fannie Mae or Freddie Mac, and guaranteed (either explicitly or implicitly) by the United States government. Foreign demand for agency MBS is broad-based, covering all six inhabited continents and nearly 200 countries and territories, although the vast majority of foreign-owned agency MBS is held by just five countries.

This paper examines the historical and present role of foreign investors in the agency MBS market, how foreign demand for agency MBS has evolved over time, and how it might evolve in the future. Specifically, this paper discusses the share of outstanding agency MBS owned by foreigner investors over time, the nations that have been the biggest buyers, how ownership patterns have changed over time, and likely reasons for such shifts. The last section of this paper discusses potential trends that could influence foreign demand for agency MBS in the coming years.

The main source of data for analyzing foreign ownership of agency MBS is the US Department of Treasury's International Capital (TIC) reporting system[2]. TIC reports cross-border securities investment flows between U.S. and foreign entities as of June every year and covers a wide range of securities in addition to MBS. This includes US Treasury securities, corporate and municipal debt, equities, and agency debt. Data on agency MBS flows is available 2003 onwards. This paper incorporates most recent TIC data, released in April 2018 and reported as of June 2017. A previous version of this paper, released in November 2017 was based on TIC data as of June 2016. It is important to note that TIC data for agency MBS is not broken out separately for

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[1] Authored by Karan Kaul and Laurie Goodman at the Urban Institute. All statements and opinions contained herein are those of the authors. See last page for detailed information on the authors and important disclosures.
Revised in June 2018 to incorporate updated TIC data released in April 2018.
Revised on March 2, 2018

[2] See https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/index.aspx

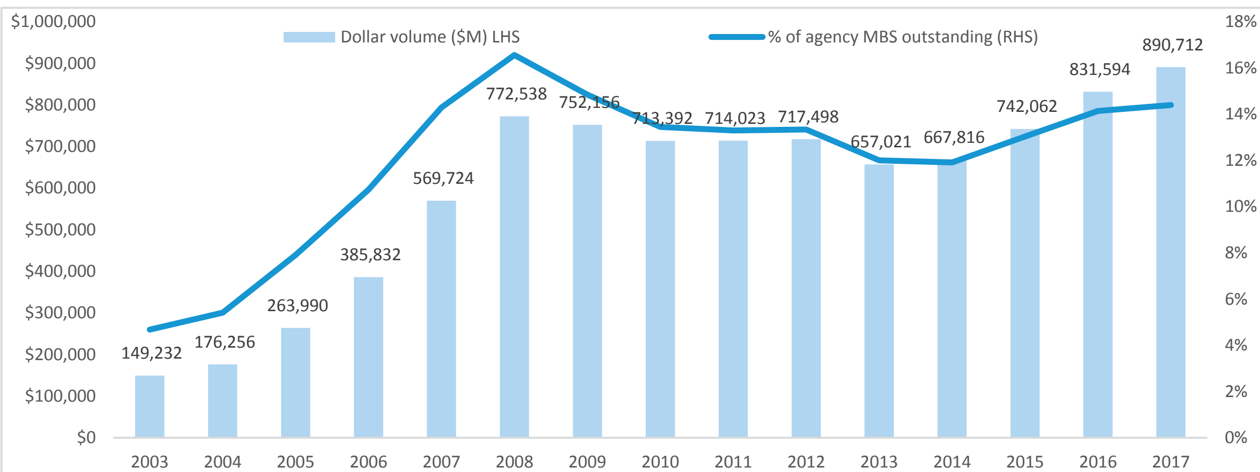
Fannie Mae, Freddie Mac and Ginnie Mae. Accordingly, the analysis presented in this paper covers all three agencies in aggregate.

Overall foreign demand for agency MBS

Foreign demand for agency MBS has increased substantially since 2003, from $149 billion to over $890 billion in 2017 (Figure 1). Ownership has increased even when measured as a share of total agency MBS outstanding. Additionally, nearly all of this increase came from 2003 to 2008 (for reasons discussed later), with relatively little growth from 2009 to 2017.

FIGURE 1

Agency MBS Owned by Foreign Entities



Source: Urban Institute calculations based on US Treasury International Capital and SIFMA data.

Even though the volume of agency MBS owned by foreign investors is large ($890 billion as of June 2017), it represents 14.4 percent of the total amount outstanding. This share is up from 14.1 percent a year ago in June 2016. Thus the overwhelming majority of agency MBS is owned by domestic entities. It is likely that the foreign ownership share varies from Fannie Mae to Freddie Mac to Ginnie Mae MBS. We expect that Ginnie Mae securities, with their explicit full-faith and credit guaranty have greater appeal to foreign investors than Fannie Mae or Freddie Mac securities, which are implicitly guaranteed.

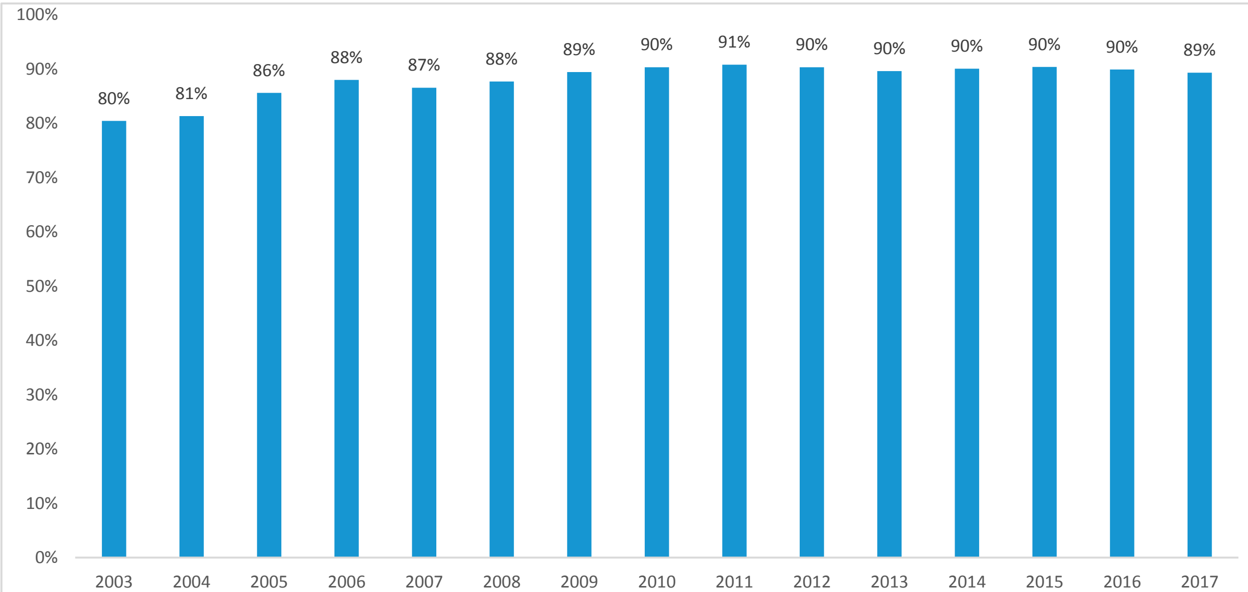
Largest foreign owners of agency MBS

TIC data tracks foreign MBS ownership by individual country. This provides more detailed insight into the ownership pattern across nations. A look at country level holdings shows that foreign ownership of agency MBS has remained highly concentrated within a handful of countries (figure 2).

FIGURE 2

Foreign Ownership of Agency MBS is Highly Concentrated

Percentage of foreign MBS held by the top 10 countries



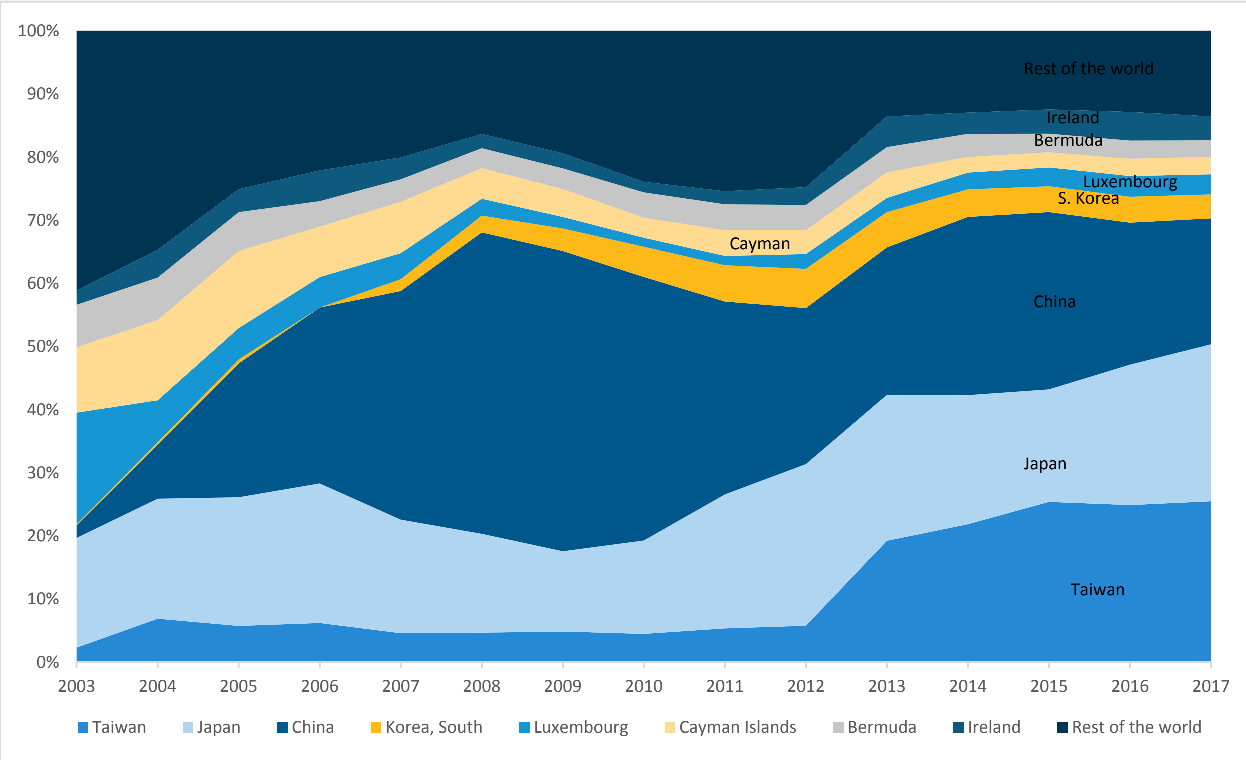
Source: Urban Institute calculations based on US Treasury International Capital data.

Currently, nearly 90 percent of foreign agency MBS is owned by just 10 countries. Although this is up from 80 percent in 2003, it has remained very stable during the last 10 years. Among the agency MBS that is foreign owned, about 70 percent is held by just three nations – Taiwan, China and Japan, and their concentration has been increasing since 2003. Collectively Asian countries[3] own about 79 percent of all foreign held MBS, with Europe owning 12.6 percent as of June 2017. Latin America, Canada, Africa, Carrabean, Australia and others own the remaining 8 percent (Figure 3).

[3] Other large Asian holders of agency MBS include Malaysia, Hong Kong, Saudi Arabia, Singapore, Indonesia and Kuwait. Also see page 46 of https://www.ginniemae.gov/data_and_reports/reporting/Documents/global_market_analysis_sep17.pdf for recent estimates of agency MBS holdings by country.

FIGURE 3

Foreign ownership of agency MBS by country



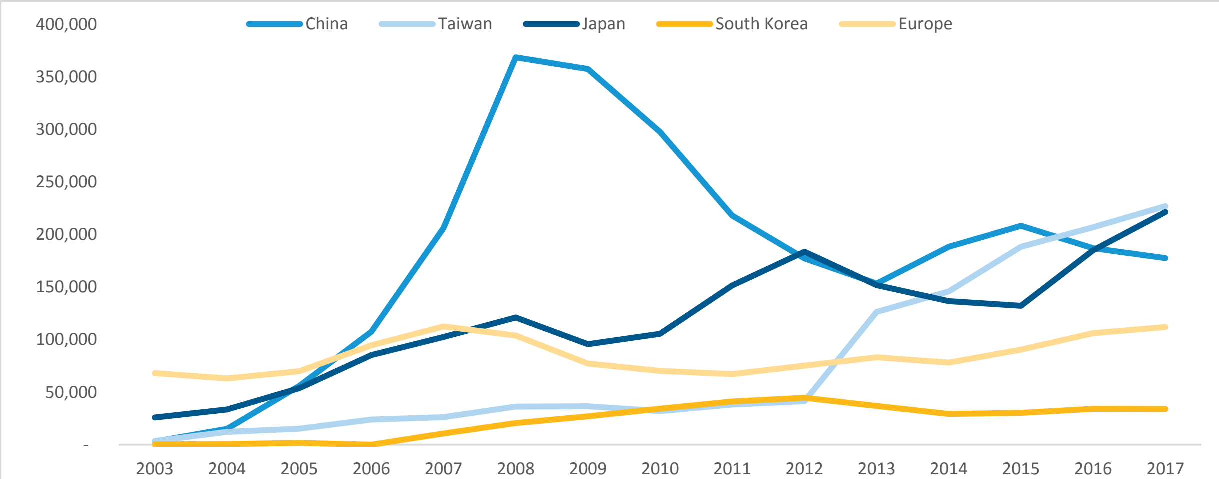
Source: Urban Institute calculations based on US Treasury International Capital data.

Changes in the ownership pattern

As figure 3 shows, the biggest driver of foreign demand in the early 2000s was China, whose rising current account balance and growing foreign exchange reserves (discussed later) provided the catalyst to scale its overseas investments, including in agency MBS. In 2003, China held under $3 billion in agency MBS, just 2 percent of the total MBS owned by foreign entites. At its 2008 peak, it held as much as $368 billion, or 48 percent of MBS owned by foreign entities. But with its growth rate slowing post-2010, China's ownership has declined to its present level of 20 percent of the foreign owned agency MBS. In dollar terms, China held $177 billion in June 2017, compared to $187 billion in June 2016, and $368 billion in June 2008 (figure 4).

FIGURE 4

Agency MBS held by China, Japan and Taiwan, South Korea ($ Millions)



Source: Urban Institute calculations based on US Treasury International Capital data.

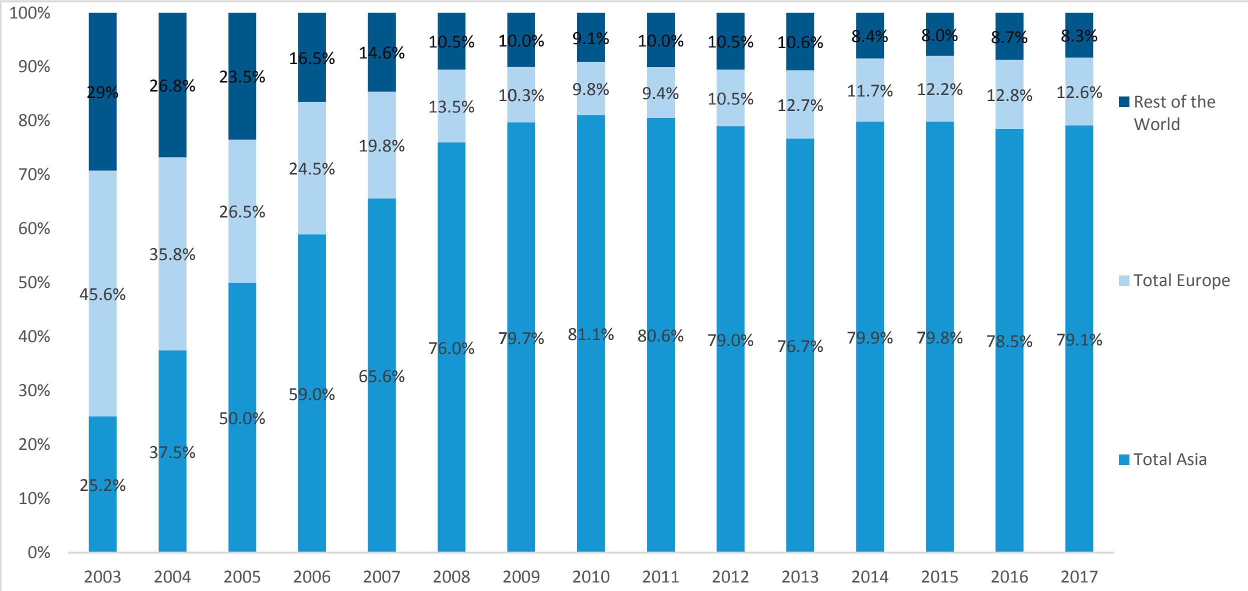
As China has stepped back, other Asian nations have filled the gap. Both Taiwan and Japan have increased their agency MBS purchases post 2010, with Taiwan being much more aggressive. Taiwan's holdings increased steadily from $3.5 billion in 2003 to $41 billion in 2012. But just one year later, in 2013, its holdings more than tripled to $126 billion. Strong growth has continued thereafter with Taiwan's holdings reaching $207 billion in 2016 and $227 billion in 2017. As a result Taiwan has not only surpassed China's holdings, but has also become the world's largest foreign holder of agency MBS.

Japan's holdings have also increased over time; however its rise has been much more steady compared to Taiwan's. Japan gradually increased its agency MBS holdings from $26 billion in 2003 to $185 billion in 2016 to $222 billion in 2017. With this growth, Japan became the second largest foreign owner of agency MBS in 2017 behind Taiwan, while China is now the third largest. Another Asian nation that has increased its purchases of agency MBS in the last decade is South Korea, although its holdings are relatively small (about $34 billion in 2017). Lastly, after declining during the financial crisis, Europe's agency MBS volume has recovered recently and is on an upward trajectory. Europe's 2017 holdings of $112 billion are slightly higher than its 2016 holdings of $106 billion and in line with its pre-crisis peak of $112 billion in 2007.

Growing demand from Japan and Taiwan, even as China has pulled back has meant that Asia's share of agency MBS ownership has continued to remain very high (figure 5). Asia's share grew modestly from 78.5 percent in 2016 to 79.1 percent in 2017. At the same time, Europe's share – after shrinking from 46 percent in 2003 to under 10 percent in 2011 – saw a very modest increase to 12.8 percent in 2016 followed by a slight decrease to 12.6 percent in 2017.

FIGURE 5

Foreign Ownership of agency MBS by Region



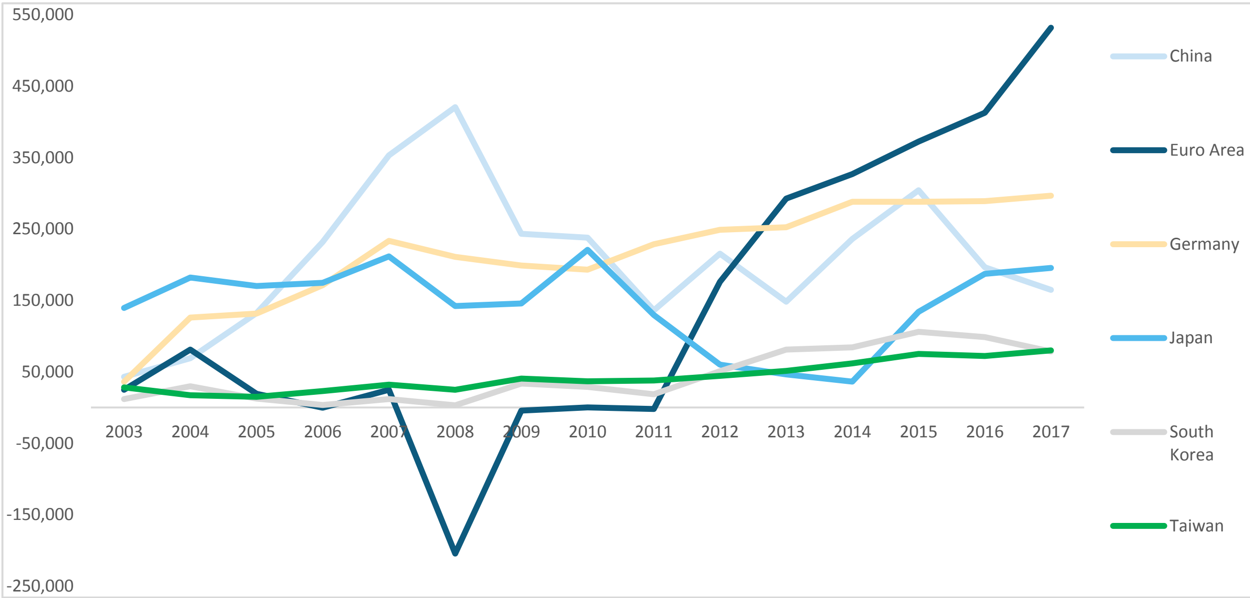
Source: Urban Institute calculations based on US Treasury International Capital data.

Drivers of shift in foreign demand

The most significant shift in foreign ownership of agency MBS clearly has been the rise of Asia at the expense of both Europe and rest of the world. As the Chinese economy grew during the 2000s, its current account balance (CAB) and its foreign exchange reserves both swelled. Huge trade surplusses year after year, especially with the US, and low levels of domestic consumer spending left China flush with cash.

FIGURE 6

Current Account Balance, $ Millions



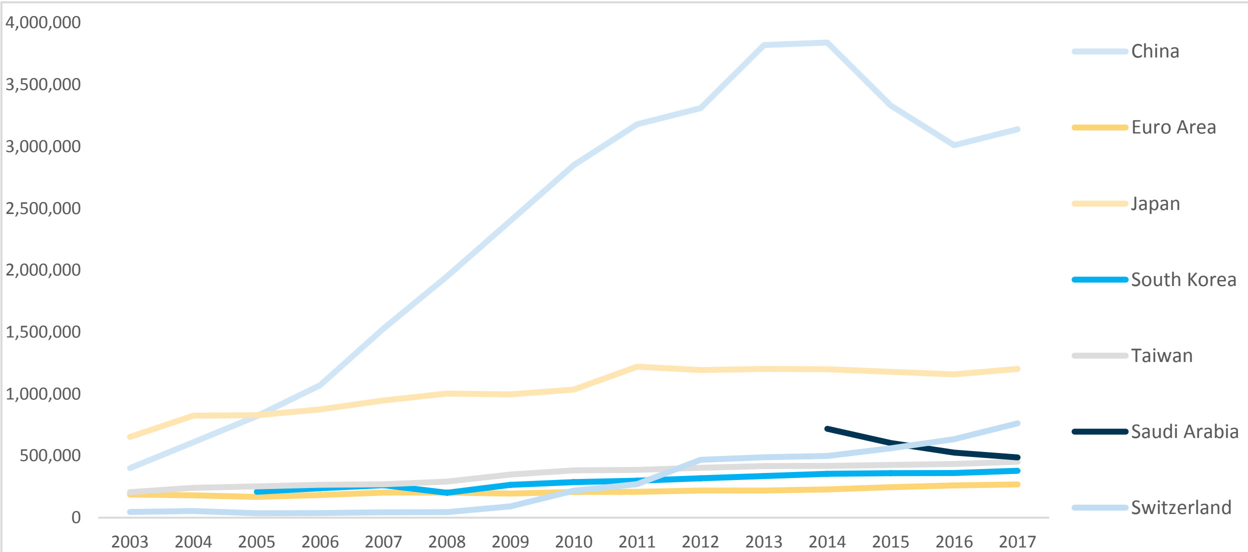
Source: International Monetary Fund

As the growth rate of the Chinese economy has slowed down, its CAB has declined from its 2008 peak of $420 billion to about $165 billion in 2017. In contrast to China, Europe's CAB remained very low until 2011, even becoming negative in 2008 and 2009 because of the global financial meltdown. Since then, EU has seen a very strong recovery, with a 2017 CAB of $530 billion (figure 6).

But Europe's growing CAB has not yet translated into a significant increase in its agency MBS holdings. The most likely reason is that Europe's foreign exchange reserves remain low (figure 7). China's foreign exchange reserves currently stand at well over $3 trillion, accumulated over a decade of trade surplusses. Japan, Taiwan and South Korea also hold significant forex reserves worth $1.2 trillion, $451 billion and $378 billion respectively. In contrast, EU region's foreign exchange reserves currently total only about $268 billion, although that number is higher than the 2009 level of $194 billion. Figure 7 also shows trends in foreign reserves of Switzerland and Saudi Arabia – two nations that have relatively large foreign reserves but own very little agency MBS.

FIGURE 7

Foreign Exchange Reserves, $ Millions



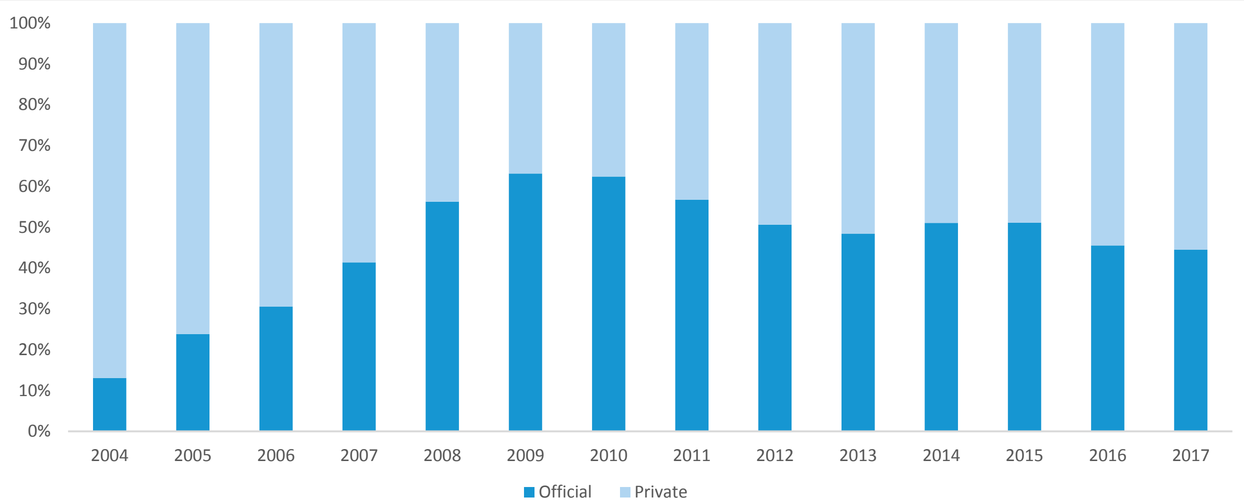
Source: International Monetary Fund

Official vs. private agency MBS holdings

Another shift in the foreign ownerhsip of agency MBS is from foreign official institutions to foreign private entities. Official institutions includes foreign governments, government institutions, foreign central banks and government-owned investment funds such as soverign wealth funds. According to TIC data, in the early 2000s, the overwhelming majority of foreign-owned MBS (87 percent) was held by private entities, while only 13 percent was held by official institutions (figure 8). By 2010 however, official institutions had increased their share to well over 60 percent, predominantly driven by the growth in China's official holdings. With China's recent retreat, the official share of foreign owned agency MBS has declined to about 45 percent, well above the level of the early 2000s. With a bigger slice of foreign owned MBS held by official institutions today than in early 2000s, foreign demand for MBS should remain more sensitive to movements in trade surplusses and foreign exchange reserves.

FIGURE 8

Foreign Ownership of agency MBS by Owner Type



Source: Urban Institute calculations based on US Treasury International Capital data.

Future of foreign ownership

Overall foreign ownership share: As shown in Figure 1 earlier, foreign ownership of agency MBS has increased over time. Between 2004 and 2008, the share of outstanding agency MBS owned by foreign entities increased from 5.4 percent to 16.6 percent (Table 1A). After declining during the Great Recession, this share has crept back up to above 14 percent presently. At the same time, the year over year growth in the volume of MBS that is foreign owned has exceeded the annual growth in agency MBS outstanding 10 out of the last 14 years. Even as foreign growth has moderated signficantly post-crisis (Table 1B), it nevertheless far outpaces the growth rate for MBS outstanding. Between June 2016 and June 2017, total agency MBS outstanding grew by 5.2 percent compared to 7.1 percent rate of growth in foreign-owned. If this trend remains in place, the share of MBS owned by foreigners will continue to rise in the coming years, although the rate of increase will be much slower than what was witnessed in booming mid-2000s.

TABLE 1A

Share of outstanding agency MBS Held by Foreign Entities

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
foreign share of outstanding	5.4%	7.9%	10.7%	14.3%	16.6%	14.8%	13.4%	13.3%	13.3%	12.0%	11.9%	13.0%	14.1%	14.4%

Source: Urban Institute calculations based on US Treasury International Capital data.

TABLE 1B

Annual Growth Rates for agency MBS Outstanding and Foreign Owned

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
agency MBS outstanding	2.1%	2.5%	7.7%	10.9%	17.0%	8.6%	4.7%	1.2%	0.2%	1.7%	2.4%	1.6%	3.3%	5.2%
foreign owned agency MBS	18.1%	49.8%	46.2%	47.7%	35.6%	-2.6%	-5.2%	0.1%	0.5%	-8.4%	1.6%	11.1%	12.1%	7.1%

Source: Urban Institute calculations based on US Treasury International Capital data.

Region/Country level holdings: As discussed previously, the vast majority (79 percent) of foreign-owned agency MBS is held by Asian nations. This level has remained quite stable, hovering around 80 percent, during the last 8 years. Along with Asia's huge current account balance and forex reserves, this suggests that Asian dominance is likely to continue for the forseeable future. At the same time, as the EU recovery continues and the region's trade surplus and forex reserves grow, one can expect EU's holdings of agency MBS to remain stable or grow modestly.

Additionally, recent increases in Europe's ownership share are likely driven by private entities as opposed to by official government institutions. About 70 percent of agency MBS owned by Europe is held by just three countries – Luxembourg, Ireland and Switzerland. All three are major banking and financial centers that attract significant investment from overseas either because they have favorable tax and regulatory regimes (Luxembourg and Ireland) or because they specialize in offering trust and custodial services to clients from around the world (Switzerland). Thus, while Europe's agency MBS holdings might very well continue growing, for the most part, that growth is likely to be driven by private entities.

Another factor that will affect future foreign ownership is the ratio of agency MBS owned to foreign exchange reserves. Table 2 shows this ratio for various regions.

TABLE 2

Agency MBS Owned as a Percentage of Foreign Exchange Reserves, by Country

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
China	0.7%	2.5%	6.8%	10.0%	13.5%	18.9%	14.9%	10.4%	6.9%	5.4%	4.0%	4.9%	6.3%	6.2%	5.7%
Taiwan	1.7%	5.0%	6.0%	9.0%	9.7%	12.4%	10.5%	8.4%	9.9%	10.3%	30.3%	34.8%	44.2%	47.7%	50.3%
Japan	4.0%	4.1%	6.5%	9.8%	10.8%	12.1%	9.6%	10.2%	12.4%	15.4%	12.6%	11.4%	11.2%	16.0%	18.4%
South Korea			0.8%	0.0%	4.1%	10.3%	10.1%	11.9%	13.8%	14.0%	10.9%	8.2%	8.4%	9.5%	8.9%
Euro	36.3%	34.9%	41.8%	51.5%	55.5%	51.5%	39.7%	33.9%	32.2%	34.3%	38.0%	34.2%	36.8%	40.7%	41.7%
Saudi Arabia												0.0%	0.9%	1.3%	1.0%
Switzerland	10.8%	9.1%	10.3%	10.5%	14.7%	0.0%	0.0%	2.4%	2.3%	1.6%	1.8%	2.0%	2.0%	1.8%	1.8%

Source: Urban Institute calculations based on US Treasury International Capital data

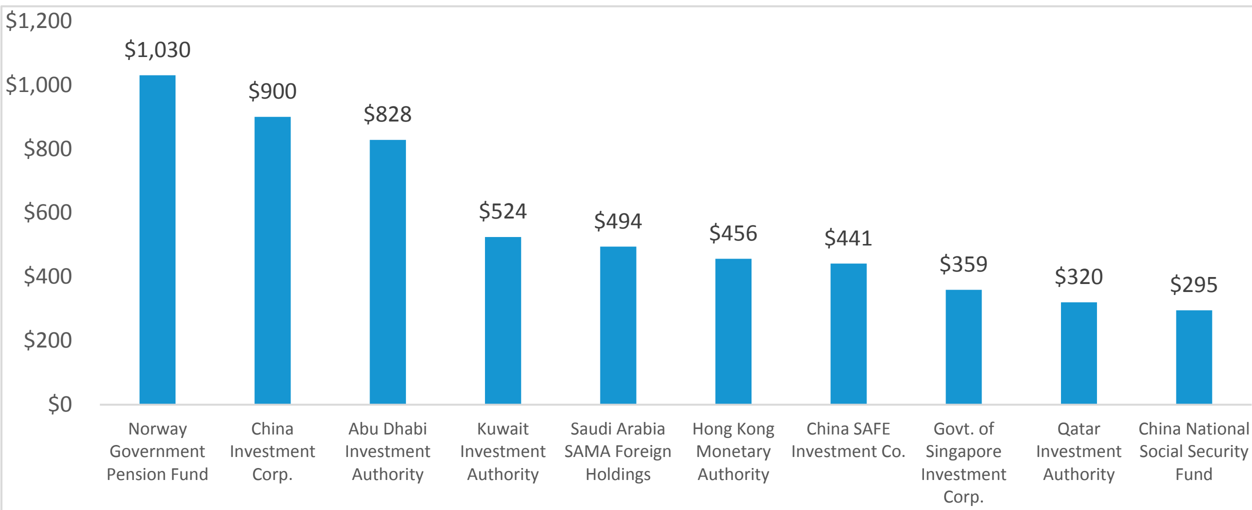
China's current agency MBS holdings of $177 billion comprise only 5.7 percent of its over $3 trillion in foreign exchange reserves. Japan's $221 billion comprise 18.4 percent of its $1.2 trillion in forex reserves, while South Korea's holdings comprise 8.9 percent of its reserves. This suggests all three have room to grow their official holdings in the future if they desire. In contrast, Taiwan and Europe have both elected to invest a much larger portion of their forex reserves (50.3 percent and 41.7 percent respectively) in agency MBS, suggesting relatively less flexibility in growing their official holdings. This could be a limiting factor for Taiwanese and European demand for agency MBS.

At the other end of the spectrum are Switzerland and Saudi Arabia – two nations with significant forex reserves, $762 billion and $486 billion respectively, but very little agency MBS holdings, $13.8 billion and $4.6 billion respectively, representing less than 2 percent of forex reserves for each. It is noteworthy that Saudi Arabia's MBS holdings shrank from $6.7 a year ago in June 2016. Israel and Turkey are two more potential sources of demand for the same reason, although their reserve levels are relatively small, $112 billion and $82 billion respectively. Israel holds only $1.5 billion in agency MBS while Turkey holds none. Official institutions from these nations could be potential sources of future demand.

Soverign Wealth Funds: Soverign wealth funds (SWFs) could be another source of demand for agency MBS. SWF holdings are classified as official and are included in the official numbers for the purposes of the TIC reporting. SWFs have witnessed a tremendous increase in assets under management in recent decades. Currently SWFs manage a total of $7.8 trillion in assets globally[4] across equities, fixed income, real estate and alternative investments. About 75 percent of global SWF assets are held by the 10 largest funds.

FIGURE 9

Top 10 Sovereign Wealth Funds by Assets Under Management ($ Billions)



Source: Sovereign Wealth Fund Institute

A high level analysis of the biggest SWFs shows that their allocation to securitized mortgage products tends to be low. The largest SWF in the world, Norway's Government Pension Fund currently invests a total of $311 billion in fixed income assets globally (representing 32% of its $954 billion under management). Of this $311 billion, about $110 billion is invested in US fixed income assets, $58 billion of which is invested in US Treasuries. Only a tiny portion of the Fund is invested in securitized assets globally, none of which is US agency mortgage-backed securities.

China Investment Corporation, with total assets under management of $813 billion[5] invests an even smaller share of its assets (15%) in fixed income investments globally. About 15% of this (i.e. 2.25%) is invested in securitized products globally. Similarly, Abu Dhabi Investment Authority, invests only a small portion of its portfolio in fixed income assets[6]. In general, SWFs tend to be more yield driven and have a higher appettite for risk, which explains lower fixed income allocations. At the same time, given their sizable assets under management, even a small increase in their allocation towards agency MBS could be significant. While a full

[4] https://www.swfinstitute.org/sovereign-wealth-fund-rankings/
[5] http://www.china-inv.cn/wps/wcm/connect/f16ecfee-5ce2-453e-8a5c-45c0f0874a9a/CICAnnualReport2016.pdf?MOD=AJPERES&CACHEID=f16ecfee-5ce2-453e-8a5c-45c0f0874a9a
[6] http://www.sovereignwealthcenter.com/fund/1/Abu-Dhabi-Investment-Authority.html#.WbA-YrJ94_k

fledged analysis of the securitized MBS holdings of SWFs is beyond the scope of this paper, these numbers suggest SWFs are another potential source of demand for agency MBS.

Conclusion

Foreign entities are a stable and an important source of demand for agency mortgage-backed securities. This demand helps diversify the investor base for agency MBS and facilitates lower mortgage rates for US homebuyers. Currently the overwhelming majority of foreign-owned agency MBS, about 80 percent, is held by Asia, primarily China, Japan and Taiwan.

The growth of Asia's holdings in the early 2000s, especially China's rise, fundamentally altered the foreign ownership pattern of agency MBS. Despite China's pullback, foreign ownership of agency MBS hasn't been affected because Japan and Taiwan, and to a lesser extend South Korea and Europe have all increased their presence. As a result, overall foreign ownership of agency MBS has continued to remain stable, a trend we expect will remain in place in the near future.

About the Authors

Karan Kaul is a research associate in the Housing Finance Policy Center at the Urban Institute. He researches topical housing finance issues to highlight the market impact of ongoing regulatory, industry, and related developments. He is also responsible for monitoring and reporting on mortgage market trends and current events weekly. Kaul came to Urban after five years at Freddie Mac, where he worked on various housing policy issues primarily related to the future of housing finance and the reform of the government-sponsored enterprises. Before Freddie Mac, Kaul worked as a research analyst covering financial institutions. He holds a bachelor's degree in electrical engineering and an MBA from the University of Maryland, College Park.

Laurie Goodman is co-director of the Housing Finance Policy Center at the Urban Institute. The center provides policymakers with data-driven analyses of housing finance policy issues they can depend on for relevance, accuracy, and independence. Before joining Urban in 2013, Goodman spent 30 years as an analyst and research department manager at several Wall Street firms. From 2008 to 2013, she was a senior managing director at Amherst Securities Group LP, a boutique broker-dealer specializing in securitized products, where her strategy effort became known for its analysis of housing policy issues. From 1993 to 2008, Goodman was head of global fixed income research and manager of US securitized products research at UBS and predecessor firms, which were ranked first by Institutional Investor for 11 straight years. Before that, she was a senior fixed income analyst, a mortgage portfolio manager, and a senior economist at the Federal Reserve Bank of New York. Goodman was inducted into the Fixed Income Analysts Hall of Fame in 2009. Goodman serves on the board of directors of the real estate investment trust MFA Financial, is an adviser to Amherst Capital Management, and is a member of the Bipartisan Policy Center's Housing Commission, the Federal Reserve Bank of New York's Financial Advisory Roundtable, and Fannie Mae's Affordable Housing Advisory Council. She has published more than 200 journal articles and has coauthored and coedited five books. Goodman has a BA in mathematics from the University of Pennsylvania and an MA and PhD in economics from Stanford University.

Disclosure