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LARGE BANK HOLDING COMPANIES

Expectations of Government Support

Statement of Lawrance L. Evans, Jr., PhD, Director
Financial Markets and Community Investment

Chairman Brown, Ranking Member Toomey, and Members of the Subcommittee:

I am pleased to be here today to discuss the results of our report on expectations of government support for large bank holding companies. As you know, "too big to fail" is the term commonly used to refer to a market notion that the federal government would intervene to prevent the failure of a large, interconnected financial institution to avoid harm to the economy. Market expectations of government rescues can distort the incentives of investors and counterparties to properly price and restrain the risks of firms they believe to be too big to fail, potentially giving rise to funding cost and other advantages for these firms relative to smaller competitors. For example, creditors may be willing to accept lower interest rates on debt issued by these firms if they believe the possibility of a government rescue reduces the likelihood that they could suffer losses. If creditors and other counterparties do not fully charge a firm for the risks it is taking, that firm may have incentives to take on greater risks in the pursuit of higher returns. Excessive risk-taking in response to such incentives can increase the likelihood that such a firm could become distressed and disrupt financial markets.

My remarks today are based on our report, released at this hearing, entitled *Large Bank Holding Companies: Expectations of Government Support*.[1] As you know, this is the second of two reports we are issuing on the topic of economic benefits that the largest bank holding companies (those with more than $500 billion in total consolidated assets) have received as a result of actual or perceived government support.[2] Accordingly, this testimony discusses (1) what is known about how financial reforms have altered market expectations of government rescues and the relative advantages or disadvantages of being a large

[1]GAO, *Large Bank Holding Companies: Expectations of Government Support*, GAO-14-621 (Washington, D.C.: July 31, 2014).

[2]In November 2013, we issued the first report, which examined (1) actual government support for banks and bank holding companies during the financial crisis and (2) recent statutory and regulatory changes related to government support for banks and bank holding companies. See GAO, *Government Support for Bank Holding Companies: Statutory Changes to Limit Future Support Are Not Yet Fully Implemented*, GAO-14-18 (Washington, D.C.: Nov. 14, 2013). At a January 2014 hearing, we provided testimony based on this report. See GAO, *Government Support for Bank Holding Companies: Statutory Changes to Limit Future Support Are Not Yet Fully Implemented*, GAO-14-174T (Washington, D.C.: Jan. 8, 2014).

bank holding company and (2) the extent to which the largest bank holding companies have received funding cost advantages as a result of perceptions that the government would not allow them to fail.

To conduct this work, we reviewed relevant statutes and rules and interviewed regulators, bank holding companies, rating agencies, investment firms, and corporate customers of banks. We also reviewed relevant studies and interviewed authors of these studies. Finally, we conducted quantitative analyses to assess potential "too-big-to-fail" funding cost advantages. Our work for the report on which this statement is based was conducted in accordance with generally accepted government auditing standards. Further details on our scope and methodology are included in the report.

In summary, we found that while views varied among market participants with whom we spoke, many believed that recent regulatory reforms have reduced but not eliminated the likelihood the federal government would prevent the failure of one of the largest bank holding companies. Our analysis suggests that large bank holding companies had lower funding costs than smaller ones during the financial crisis but provides mixed evidence of such advantages in recent years. While there were notable exceptions, most models suggest that such advantages may have declined or reversed. For example, most models we estimated suggest that large bank holding companies had higher bond funding costs than smaller bank holding companies in 2013. However, the outcomes of our econometric models varied with the choice of variables we used to capture size, credit risk, and bond liquidity, and some still predicted a funding cost advantage for larger banks in 2013. Moreover, in hypothetical scenarios in which the level of credit risk in every year from 2010 through 2013 is assumed to be as high as it was in 2008 during the crisis, most of our models suggest that bond funding costs for larger bank holding companies would have been lower than those for smaller bank holding companies in most years during this period. Given the nature of this analysis and associated limitations, our results should be interpreted with caution. Changes over time in our estimates of the relationship between bond funding costs and size may reflect changes in investors' beliefs about the likelihood that a bank holding company will fail, the likelihood that it will be rescued by the government if it fails, and the size of the losses that the government may impose on investors if it rescues the bank holding company. However, we cannot precisely identify the influence of each of these factors. In addition, our estimates may also reflect differences in the characteristics of bank holding companies that

do and do not issue bonds or factors we have not captured in our model. Finally, our estimates are not indicative of future trends.

Views of Key Market Observers on Recent Regulatory Reforms

U.S. federal financial regulators have made progress in implementing provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) and related reforms to restrict future government support and reduce the likelihood and impacts of the failure of a systemically important financial institution (SIFI).[3] These reforms can be grouped into four general categories: (1) restrictions on regulators' emergency authorities to provide assistance to financial institutions; (2) new tools and authorities for regulators to resolve a failing SIFI outside of bankruptcy if its failure would have serious adverse effects on the U.S. financial system; (3) enhanced regulatory standards for SIFIs related to capital, liquidity, and risk management; and (4) other reforms intended to reduce the potential disruptions to the financial system that could result from a SIFI's failure.

We found that while views varied among market participants with whom we spoke, many believed that recent regulatory reforms have reduced but not eliminated the likelihood the federal government would prevent the failure of one of the largest bank holding companies. Citing recent reforms, two of the three largest credit rating agencies reduced or eliminated "uplift"—an increase in the credit rating—they had assigned to the credit ratings of eight of the largest bank holding companies due to their assumptions of government support for these firms. Credit rating agencies and large investors cited the new Orderly Liquidation Authority, which gives the Federal Deposit Insurance Corporation new authority to resolve large financial firms outside of the bankruptcy process, as a key factor influencing their views. While several large investors viewed the resolution process as credible, others cited potential challenges, such as the risk that multiple failures of large firms could destabilize markets.

[3]Pub. L. No. 111-203, 124 Stat. 1376 (2010). While the Dodd-Frank Act does not use the term "systemically important financial institution," this term is commonly used by academics and other experts to refer to bank holding companies with $50 billion or more in total consolidated assets and nonbank financial companies designated by the Financial Stability Oversight Council for Federal Reserve supervision and enhanced prudential standards.

Remaining market expectations of government support can benefit large bank holding companies to the extent that these expectations affect decisions by investors, counterparties, and customers of these firms. For example, market beliefs about government support could benefit a firm by lowering its funding costs to the extent that providers of funds—such as depositors, bond investors, and stockholders—rely on credit ratings that assume government support or incorporate their own expectations of government support into their decisions to provide funds. Second, higher credit ratings from assumed government support can benefit firms through private contracts that reference credit ratings such as derivative contracts that tie collateral requirements to a firm's credit rating. Finally, expectations of government support can affect a firm's ability to attract customers to varying degrees.

New and higher fees imposed by the Dodd-Frank Act, stricter regulatory standards, and other reforms could increase costs for the largest bank holding companies relative to smaller competitors.[4] Officials from the Financial Stability Oversight Council (FSOC) and its member agencies have stated that financial reforms have not completely removed too-big-to-fail perceptions but have made significant progress toward doing so. According to Department of the Treasury (Treasury) officials, key areas that require continued progress include education of market participants on reforms and international coordination on regulatory reform efforts, such as creating a viable process for resolving a failing financial institution with significant cross-border activities.

[4]In our report, we did not attempt to quantify the extent to which such higher costs for the largest firms could offset benefits they receive as a result of expectations of government support. For example, we did not attempt to determine the differential impacts of various Dodd-Frank Act provisions on bank holding companies of different sizes. Implementation of some Dodd-Frank Act provisions specifically targets only SIFIs, while other provisions affect both SIFIs and non-SIFIs. Representatives of community banks and other non-SIFIs have noted that while some Dodd-Frank Act provisions—such as the Volcker rule, which prohibits proprietary trading by insured depository institutions and their affiliates and restricts sponsorship or investment in hedge and private equity funds—were intended to target activities at the largest bank holding companies, smaller banks can still face burdens associated with ensuring they comply with these rules. Federal financial regulators have acknowledged the importance of minimizing regulatory burdens for financial institutions and particularly for smaller banks, whose fixed costs arising from regulatory compliance must be spread over a smaller base of revenues.

Analysis of Funding Cost Differences between Large and Small Banks

We analyzed the relationship between a bank holding company's size and its funding costs, taking into account a broad set of other factors that can influence funding costs. To inform this analysis and to understand the breadth of methodological approaches and results, we reviewed selected studies that estimated funding cost differences between large and small financial institutions that could be associated with the perception that some institutions are too big to fail. Studies we reviewed generally found that the largest financial institutions had lower funding costs during the 2007-2009 financial crisis but that the difference between the funding costs of the largest and smaller institutions has since declined. However, these empirical analyses contain a number of limitations that could reduce their validity or applicability to U.S. bank holding companies. For example, some studies used credit ratings, which provide only an indirect measure of funding costs. In addition, studies that pooled a large number of countries in their analysis have results that may not be applicable to U.S. bank holding companies and studies that did not include data past 2011 have results that may not reflect recent changes in the regulatory environment.

Our analysis, which addresses some limitations of these studies, suggests that large bank holding companies had lower funding costs than smaller ones during the financial crisis but provides mixed evidence of such advantages in recent years. However, most models suggest that such advantages may have declined or reversed.

To conduct our analysis, we developed a series of econometric models—models that use statistical techniques to estimate the relationships between quantitative economic and financial variables—based on our assessment of relevant studies and expert views. These models estimate the relationship between bank holding companies' bond funding costs and their size, while also controlling for other drivers of bond funding costs, such as bank holding company credit risk. Key features of our approach include the following:

- **U.S. bank holding companies**. To better understand the relationship between bank holding company funding costs and size in the context of the U.S. economic and regulatory environment, we only analyzed U.S. bank holding companies. In contrast, some of the literature we reviewed analyzed nonbank financial companies and foreign companies.

- **2006-2013 time period**. To better understand the relationship between bank holding company funding costs and size in the context

of the current economic and regulatory environment, we analyzed the period from 2006 through 2013, which includes the recent financial crisis as well as years before the crisis and following the enactment of the Dodd-Frank Act. In contrast, some of the literature we reviewed did not analyze data in the years after the financial crisis.

- **Bond funding costs**. We used bond yield spreads—the difference between the yield or rate of return on a bond and the yield on a Treasury bond of comparable maturity—as our measure of bank holding company funding costs because they are a direct measure of what investors charge bank holding companies to borrow money and because they are sensitive to credit risk and hence expected government support. This indicator of funding costs has distinct advantages over certain other indicators used in studies we reviewed, including credit ratings, which do not directly measure funding costs, and total interest expense, which mixes the costs of funding from multiple sources.

- **Alternative measures of size**. Size or systemic importance can be measured in multiple ways, as reflected in our review of the literature. Based on that review and the comments we received from external reviewers, we used four different measures of size or systemic importance: total assets, total assets and the square of total assets, whether or not a bank holding company was designated a global systemically important bank by the Financial Stability Board in November 2013, and whether or not a bank holding company had assets of $50 billion or more.

- **Extensive controls for bond liquidity, credit risk, and other key factors**. To account for the many factors that could influence funding costs, we controlled for credit risk, bond liquidity, and other key factors in our models. We included a number of variables that are associated with the risk of default, including measures of capital adequacy, asset quality, earnings, and volatility. We also included a number of variables that can be used to measure bond liquidity. Finally, we included variables that measure other key characteristics of bonds, such as time to maturity, and key characteristics of bank holding companies, such as operating expenses. Our models include a broader set of controls for credit risk and bond liquidity than some studies we reviewed and we directly assess the sensitivity of our results to using alternative controls on our estimates of funding costs.

- **Multiple model specifications**. In order to assess the sensitivity of our results to using alternative measures of size, bond liquidity, and

credit risk, we estimated multiple different model specifications. We developed models using four alternative measures of size, two alternative sets of measures of capital adequacy, six alternative measures of volatility, and three alternative measures of bond liquidity. In contrast, some of the studies we reviewed estimated a more limited number of model specifications.

- **Link between size and credit risk**. To account for the possibility that investors' beliefs about government rescues affect their responsiveness to credit risk, our models allow the relationships between bank holding company funding costs and credit risk to depend on size.

Altogether, we estimated 42 different models for each year from 2006 through 2013 and then used those models to compare bond yield spreads—our measure of bond funding costs—for bank holding companies of different sizes but with the same level of credit risk.[5] Figure 1 shows our models' comparisons of bond funding costs for bank holding companies with $1 trillion in assets and average credit risk and bond funding costs for similar bank holding companies with $10 billion in assets, for each model and for each year.[6] Each circle and dash in figure 1 shows the comparison for a different model. Circles show model-estimated differences that were statistically significant at the 10 percent level, while dashes represent differences that were not statistically significant at that level.[7] Circles and dashes below zero correspond to models suggesting that bank holding companies with $1 trillion in assets have lower bond funding costs than bank holding companies with $10 billion in assets, and vice versa. For example, for 2013, a total of 18

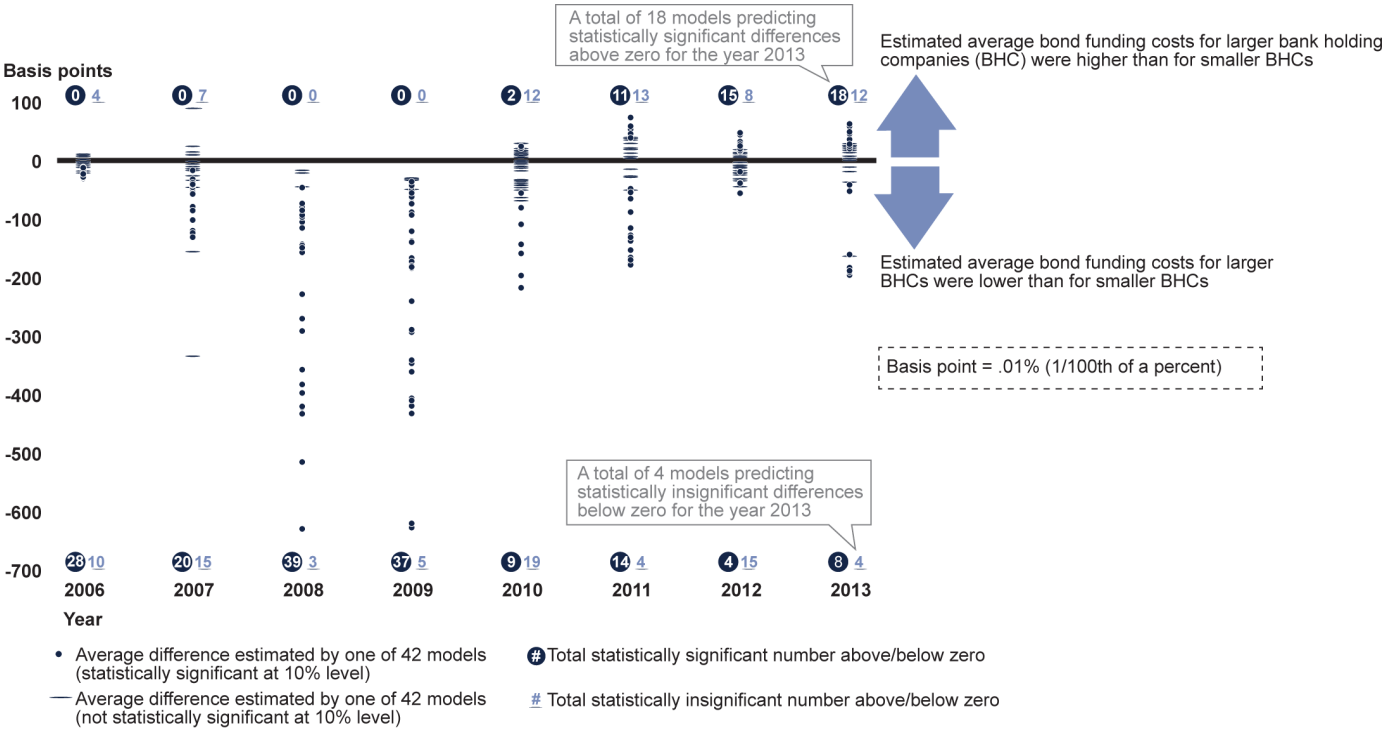
[5]Our models allow the size of a bank holding company to influence its bond funding costs directly and also indirectly through the interaction between size and credit risk. As a result, no single parameter is sufficient to describe the relationship between bond funding costs and size. To summarize the overall relationship between bond funding costs and size reflected in each specification, we calculated bond funding costs for bank holding companies of different sizes and credit risk levels using our estimates of the parameters for each specification for each year. See appendix I of GAO-14-621 for more details on these calculations.

[6]We also compared funding costs for bank holding companies with $50 billion, $100 billion, $250 billion, and $500 billion in assets to bank holding companies with $10 billion in assets. See appendix I of GAO-14-621.

[7]Many of the estimates that were statistically significant at the 10 percent level were also statistically significant at the 5 percent or 1 percent level. See table 5 in appendix I of GAO-14-621.

models predicted statistically significant differences above zero and a total of eight models predicted statistically significant differences below zero.

Figure 1: Estimates from 42 Models of Average Bond Funding Cost Differences between Bank Holding Companies with $1 Trillion and $10 Billion in Assets, 2006-2013



Source: GAO analysis of data from Bloomberg and the Financial Stability Board. | GAO-14-621

Notes: We estimated econometric models of the relationship between bank holding company size and funding costs using data for U.S. bank holding companies and their outstanding senior unsecured bonds for the first quarter of 2006 through the fourth quarter of 2013. The models used bond yield spreads to measure funding costs and controlled for credit risk factors such as capital adequacy, asset quality, earnings, maturity mismatch, and volatility, as well as bond liquidity and other characteristics of bonds and bank holding companies that can affect funding costs. We estimated 42 models for each year from 2006 through 2013 to assess the sensitivity of estimated funding cost differences to alternative measures of capital adequacy, volatility, bond liquidity, and size or systemic importance. We used the models to compare bond funding costs for bank holding companies of different sizes but the same levels of credit risk, bond liquidity, and other characteristics. This figure compares bond funding costs for bank holding companies with $1 trillion and $10 billion in assets, for each model and for each year, with average levels of credit risk. Each circle and dash shows the comparison for a different model, where points below zero suggest bank holding companies with $1 trillion in assets have lower bond funding costs than bank holding companies with $10 billion in assets, and vice versa.

Our analysis provides evidence that the largest bank holding companies had lower funding costs during the 2007-2009 financial crisis but that

these differences may have declined or reversed in recent years. However, we found that the outcomes of our econometric models varied with the various controls we used to capture size, credit risk, and bond liquidity. This variation indicates that uncertainty related to how to model funding costs has an important impact on estimated funding cost differences between large and small bank holding companies. As figure 1 shows, most models found that larger bank holding companies had lower bond funding costs than smaller bank holding companies during the 2007-2009 financial crisis, but the magnitude of the difference varied widely across models, as indicated by the range of results for each year. For example, for 2008, our models suggest that bond funding costs for bank holding companies with $1 trillion in assets and average credit risk were from 17 to 630 basis points lower than bond funding costs for similar bank holding companies with $10 billion in assets.

Our models' comparisons of bond funding costs for different-sized bank holding companies for 2010 through 2013 also vary widely. For bank holding companies with average credit risk, more than half of our models suggest that larger bank holding companies had higher bond funding costs than smaller bank holding companies from 2011 through 2013, but many models suggest that larger bank holding companies still had lower bond funding costs than smaller ones during this period. For example, for 2013, our models suggest that bond funding costs for average credit risk bank holding companies with $1 trillion in assets ranged from 196 basis points lower to 63 basis points higher than bond funding costs for similar bank holding companies with $10 billion in assets (see fig. 1). For 2013, 30 of our models suggest that the larger banks had higher funding costs, and 12 of our models suggest that the larger banks had lower funding costs.

To assess how investors' beliefs that the government will support failing bank holding companies have changed over time, we compared bond funding costs for bank holding companies of various sizes while holding the level of credit risk constant over time at the average for 2008—a relatively high level of credit risk that prevailed during the financial crisis. In these hypothetical scenarios, most models suggest that bond funding costs for larger bank holding companies would have been lower than bond funding costs for smaller bank holding companies in most years from 2010 to 2013. For example, most models for 2013 predict that bond funding costs for larger bank holding companies would be higher than for smaller bank holding companies at the average level of credit risk in that year, but would be lower at financial crisis levels of credit risk (see fig. 2). These results suggest that changes over time in funding cost differences

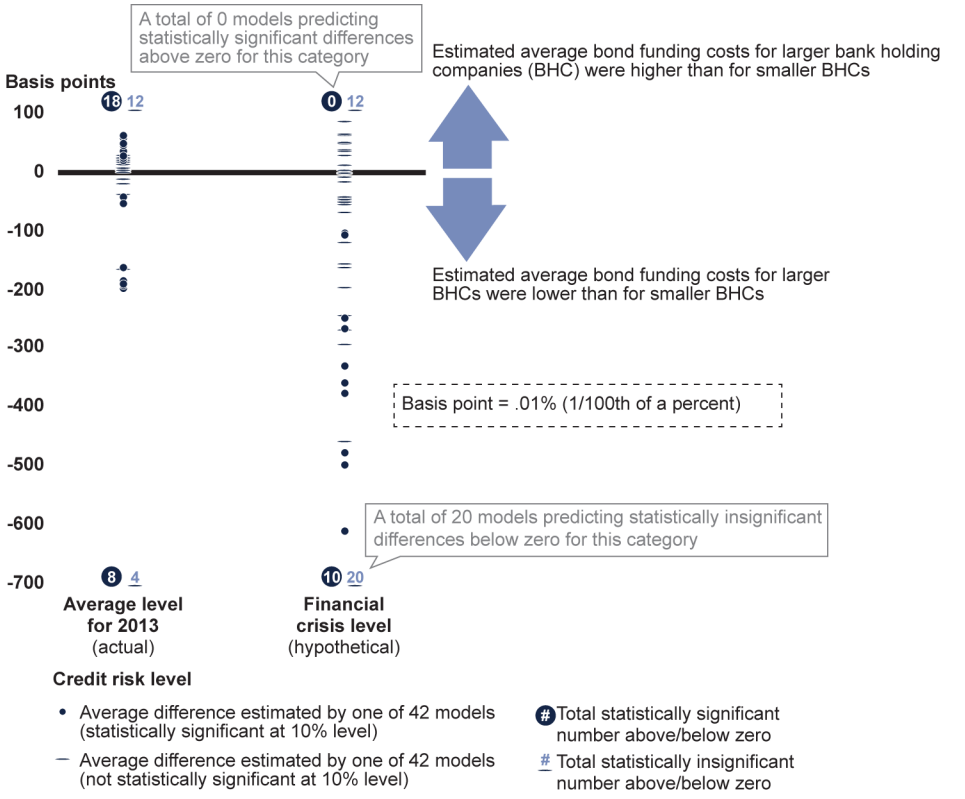
we estimated (depicted in fig. 1) have been driven at least in part by improvements in the financial condition of bank holding companies.[8] At the same time, more models predict lower bond funding costs for larger bank holding companies in 2008 than in 2013 when we assume that financial crisis levels of credit risk prevailed in both years, which suggests that investors' expectations of government support have changed over time.[9] However, it is important to note that the relationships between variables estimated by our models could be sensitive to the average level of credit risk among bank holding companies, making these estimates of the potential impact of the level of credit risk from 2008 in the current environment even more uncertain.[10] Moreover, Dodd-Frank Act reforms discussed earlier in this statement, such as enhanced regulatory standards for capital and liquidity, could enhance the stability of the U.S. financial system and make such a credit risk scenario less likely.

[8]As discussed earlier in this testimony, many investment firm representatives with whom we spoke credited enhanced regulatory standards with improving the safety and soundness of the largest bank holding companies and reducing the likelihood that they would experience distress that could result in failure or government support.

[9]To see this, compare the 2008 estimates in figure 1 to the "financial-crisis level" estimates for 2013 in figure 2. Both sets of estimates are derived assuming that the level of credit risk is equal to the average for 2008.

[10]The average values of the credit risk variables for 2008 were less than the maximum values of the credit risk variables for 2013, with the exceptions of the variables measuring equity price volatility, option implied volatility, equity return volatility, and excess equity return volatility.

Figure 2: Difference in Estimated Bond Funding Costs for Bank Holding Companies with $1 Trillion versus $10 Billion in Assets by Level of Credit Risk, 2013



Source: GAO analysis of data from Bloomberg and the Financial Stability Board. | GAO-14-621

Notes: We estimated econometric models of the relationship between bank holding company size and funding costs using data for U.S. bank holding companies and their outstanding senior unsecured bonds for the first quarter of 2006 through the fourth quarter of 2013. The models used bond yield spreads to measure funding costs and controlled for credit risk factors such as capital adequacy, asset quality, earnings, maturity mismatch, and volatility, as well as bond liquidity and other characteristics of bonds and bank holding companies that can affect funding costs. We estimated 42 models for each year from 2006 through 2013 to assess the sensitivity of estimated funding cost differences to alternative measures of capital adequacy, volatility, bond liquidity, and size or systemic importance. We used the models to compare bond funding costs for bank holding companies of different sizes but the same levels of credit risk, bond liquidity, and other characteristics. This figure compares bond funding costs for bank holding companies with $1 trillion and $10 billion in assets, for each model for 2013, with the average level of credit risk in 2013 and the average level of credit risk in 2008 during the financial crisis. Each circle and dash shows the comparison for a different model, where circles and dashes below zero suggest bank holding companies with $1 trillion in assets have lower bond funding costs than bank holding companies with $10 billion in assets, and vice versa.

This analysis builds on certain aspects of prior studies, but our estimates of the relationship between the size of a bank holding company and the yield spreads on its bonds are limited by several factors and should be interpreted with caution. Our estimates of differences in funding costs

reflect a combination of several factors, including investors' beliefs about the likelihood that a bank holding company will fail, the likelihood that it will be rescued by the government if it fails, and the size of the losses that the government may impose on investors if it rescues the bank holding company. Like the methodologies used in the literature we reviewed, our methodology does not allow us to precisely identify the influence of each of these components. As a result, changes over time in our estimates of the relationship between bond funding costs and size may reflect changes in one or more of these components, but we cannot identify which with certainty. In addition, these estimates may reflect factors other than investors' beliefs about the likelihood of government support and may also reflect differences in the characteristics of bank holding companies that do and do not issue bonds. If a factor that we have not taken into account is associated with size, then our results may reflect the relationship between bond funding costs and this omitted factor instead of, or in addition to, the relationship between bond funding costs and bank holding company size. Finally, our estimates are not indicative of future trends.

After reviewing the draft report, Treasury provided general comments and Treasury, FDIC, the Federal Reserve Board, and OCC provided technical comments. In its written comments, Treasury commented that our draft report represents a meaningful contribution to the literature and that our results reflect increased market recognition that the Dodd-Frank Act ended "too big to fail" as a matter of law. While our results do suggest bond funding cost differences between large and smaller bank holding companies may have declined or reversed since the 2007-2009 financial crisis, we also found that a higher credit risk environment could be associated with lower bond funding costs for large bank holding companies than for small ones. Furthermore, as we have noted, many market participants we spoke with believe that recent regulatory reforms have reduced but not eliminated the perception of "too big to fail" and both they and Treasury officials indicated that additional steps were required to address "too big to fail."As discussed, changes over time in our estimates of the relationship between bond funding costs and size may reflect changes in one or more components of investors' beliefs about government support—such as their views on the likelihood that a bank holding company will fail and the likelihood it will be rescued if it fails—but we cannot precisely identify the influence of each factor with certainty. In addition, Treasury and other agencies provided via email technical comments related to the draft report's analysis of funding cost differences between large and small bank holding companies. We incorporated these comments into the report, as appropriate. A complete

discussion of the agencies' comments and our evaluation are provided in the report.

Chairman Brown, Ranking Member Toomey, and Members of the Subcommittee, this concludes my prepared remarks. I would be happy to answer any questions that you or other Members of the Subcommittee may have.

GAO Contacts

For future contacts regarding this statement, please contact Lawrance L. Evans, Jr. at (202) 512-4802 or at evansl@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other GAO staff who made significant contributions to this statement and the report it is based on include: Karen Tremba, Assistant Director; John Fisher (Analyst-in-Charge); Bethany Benitez; Michael Hoffman; Risto Laboski; Courtney LaFountain; Rob Letzler; Marc Molino; Jason Wildhagen; and Jennifer Schwartz. Other assistance was provided by Abigail Brown; Rudy Chatlos; Stephanie Cheng; and José R. Peña.